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1987
South Dakota
Motor Vehicle Traffic Accident Summary

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Governor

Prepared By
Department of Transportation
Accident Records Office

In Cooperation With
Department of Commerce & Regulation
Office of Highway Safety

STATE OF SOUTH DAKOTA

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July 30, 1988

Dear Reader:

It is a pleasure for me to introduce the 1987 edition of the South Dakota Motor Vehicle Accident Summary and to compliment the work of dedicated South Dakotans in traffic safety. The efforts by all those involved in traffic safety have resulted in a continual decline in the motor vehicle fatality rate in South Dakota. In 1987, we recorded the lowest rate ever, with less than two deaths per 100 million vehicle miles traveled.

The reasons for the increasing safety of travel on roadways are many, and include several different departments and individual efforts. Law enforcement personnel assist with the detection and apprehension of the drinking driver and speeding motorist. Traffic engineering personnel continually strive to make our roadways as safe as possible through construction and renovation. Additionally, the public's increased awareness of the tragedy that can result has led to more South Dakotans operating their vehicles more safely.

The traffic safety program in South Dakota is functioning at a high level and continues to grow in its safety effort. Results of these efforts are showing up in our statistics, and are a great benefit to our citizens. I look forward to increased benefits and achievements in the future. Please drive defensively and sober and please....BUCKLE UP!

Very truly yours,

GEORGE S. MICKELSON

GSM:jsl

CELEBRATE THE CENTURY
1889 1989
South Dakota

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I. INTRODUCTION

The South Dakota Motor Vehicle Accident Summary was developed to provide an overview of the South Dakota traffic accident picture, as well as make frequently requested information available. Information from 1987 comprises the major portion of the book; however, basic historic trends are also provided for reference.

The Motor Vehicle Accident Summary is divided into two main sections, Historical Trends and 1987 Motor Vehicle Accident Profile. The Historical Trend section provides information on alcohol involvement in motor vehicle accidents and results of South Dakota's efforts to combat the drinking driver. This section also provides data on restraint usage and accident trends. The 1987 Accident Profile section details the accident picture for 1987 as well as a glossary of terms.

The majority of the information in this book is provided by the Accident Records Section within the Department of Transportation. Current state law requires an accident report be filed for each motor vehicle traffic accident resulting in the death or injury of a person, or property damage to an apparent extent of five hundred dollars or more to any one person's property or one thousand dollars accumulated damage per accident. Law enforcement agencies provide the accident reports to Accident Records. These reports are available to the public for a fee of two dollars.

Examples of reports available through Accident Records are:

STANDARD REPORTS - These reports provide the user with a standard set of summary information for a preselected subset of all accidents, e.g., all accidents involving a drinking driver.

PLOT MAPS - These maps supply the user with a graphic display on which the location of each accident in a given geographic area has been plotted on transparent paper and scaled to overlay maps provided by the Department of Transportation.

SPECIAL REQUESTS - Special requests are answered using several computer packages, one of which is an on-line query system which provides almost immediate response to requests of a very specific nature.

For additional information or copies, write or call:

Accident Records Section
118 West Capitol Avenue
Pierre, SD 57501-2080
Phone: (605) 773-3868

-OR-

Office of Highway Safety
118 West Capitol Avenue
Pierre, SD 57501-2080
Phone: (605) 773-3675

SOUTH DAKOTA

STATISTICAL SUMMARY

1987

NUMBER OF REPORTED MOTOR VEHICLE TRAFFIC ACCIDENTS: 13,083

AMOUNT OF MOTOR VEHICLE TRAFFIC ACCIDENT PROPERTY DAMAGE: $36 million

NUMBER OF MOTOR VEHICLE TRAFFIC ACCIDENT INJURIES: 6,221

NUMBER OF MOTOR VEHICLE TRAFFIC ACCIDENT FATALITIES: 134

ECONOMIC LOSS FROM MOTOR VEHICLE TRAFFIC ACCIDENTS: $93 million

PERCENT OF DRIVERS IN FATAL ACCIDENTS WHO HAD BEEN DRINKING: 34.2%

NUMBER KILLED IN ALCOHOL-RELATED ACCIDENTS: 66

NUMBER INJURED IN ALCOHOL-RELATED ACCIDENTS: 1,183

NUMBER OF PEDESTRIANS KILLED: 7

NUMBER OF MOTORCYCLISTS KILLED: 14

NUMBER OF BICYCLISTS KILLED: 1

PERCENT OF LICENSED DRIVERS UNDER 25: 19%

PERCENT OF ACCIDENT-INVOLVED SPEEDING DRIVERS UNDER 25: 58%

PERCENT OF ACCIDENT-INVOLVED DRINKING DRIVERS UNDER 25: 50%

NUMBER OF DWI CONVICTIONS: 6343

NUMBER OF FELONY DWI STATE PENITENTIARY INMATES: 68

SEATBELT USE RATE OF ACCIDENT-INVOLVED DRIVERS: 19.6

HELMET USE RATE OF ACCIDENT-INVOLVED MOTORCYCLISTS: 28.2%

NUMBER OF UNRESTRAINED CHILDREN UNDER 5 YEARS OF AGE KILLED IN MOTOR VEHICLE ACCIDENTS: 2

NUMBER OF PROPERLY RESTRAINED CHILDREN UNDER 5 YEARS OF AGE KILLED IN MOTOR VEHICLE ACCIDENTS: 1

AVERAGE TRAVEL SPEED ON SOUTH DAKOTA HIGHWAYS POSTED 55 MPH: 56.7 MPH

PERCENT OF MOTORISTS EXCEEDING 55 MPH ON POSTED 55 MPH HIGHWAYS: 46.1%

II. HISTORICAL TRENDS

Motor Vehicle Accidents

The fatality rates per 100 million vehicle miles traveled from 1978-1987 for South Dakota, states surrounding South Dakota, and the nation are shown in TABLE 2-1. South Dakota's rate, the national rate, and the rate of those states bordering South Dakota have all shown a decline over the last ten years. FIGURE 2-1 compares South Dakota with the national rate and two comparable rural states, North Dakota and Wyoming.

TABLE 2-1
FATALITY RATE COMPARISON
1978-1987

State	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
South Dakota	3.3	3.8	4.2	3.2	2.7	2.7	2.2	2.0	2.0	1.9
Iowa	3.3	3.5	3.4	3.3	2.5	2.6	2.1	2.3	2.2	2.3
Minnesota	3.4	3.0	3.0	2.7	2.0	1.8	1.8	1.8	1.7	1.5
Montana	3.9	5.0	4.9	4.8	3.8	4.0	3.2	3.0	2.9	2.9
Nebraska	2.8	2.8	3.5	3.3	2.3	2.2	2.4	2.0	2.3	2.3
North Dakota	3.5	2.5	2.9	3.0	2.8	2.2	1.9	1.6	1.8	1.7
Wyoming	5.2	5.2	5.2	5.4	3.9	3.4	3.1	2.9	3.2	2.5
National	3.3	3.3	3.4	3.2	2.8	2.6	2.6	2.5	2.5	2.4

Note: Fatality Rate is the number of traffic fatalities per 100 million vehicle miles traveled.

Source: Department of Transportation: Accident Records

TABLE 2-2 provides a yearly comparison of South Dakota's motor vehicle traffic accidents from 1960 through 1987. Any comparison of motor vehicle accidents must be made with caution due to the changes in the definition of a reportable accident. For example, in the late 1970's the definition of a fatality caused by a motor vehicle accident was changed from the death occurring up to one year after the accident to death occurring within 30 days after the accident. Although this would not change the fact that the number and rate of fatalities has shown a steady decline, the decline in the last few years would not have been as much. There does not appear to be a single reason why there are fewer fatalities; however, the national 55 mph speed limit law initiated in 1974 and the increased efforts in the drinking driving area in 1981 have probably had the most impact. Other factors include improvements in the highways, safer vehicles, and traffic enforcement efforts. Also of importance is the fact that both the number of registered motor vehicles and the vehicle miles traveled continue to increase.

FIGURE 2-1 FATALITY RATE COMPARISON

1978 - 1987

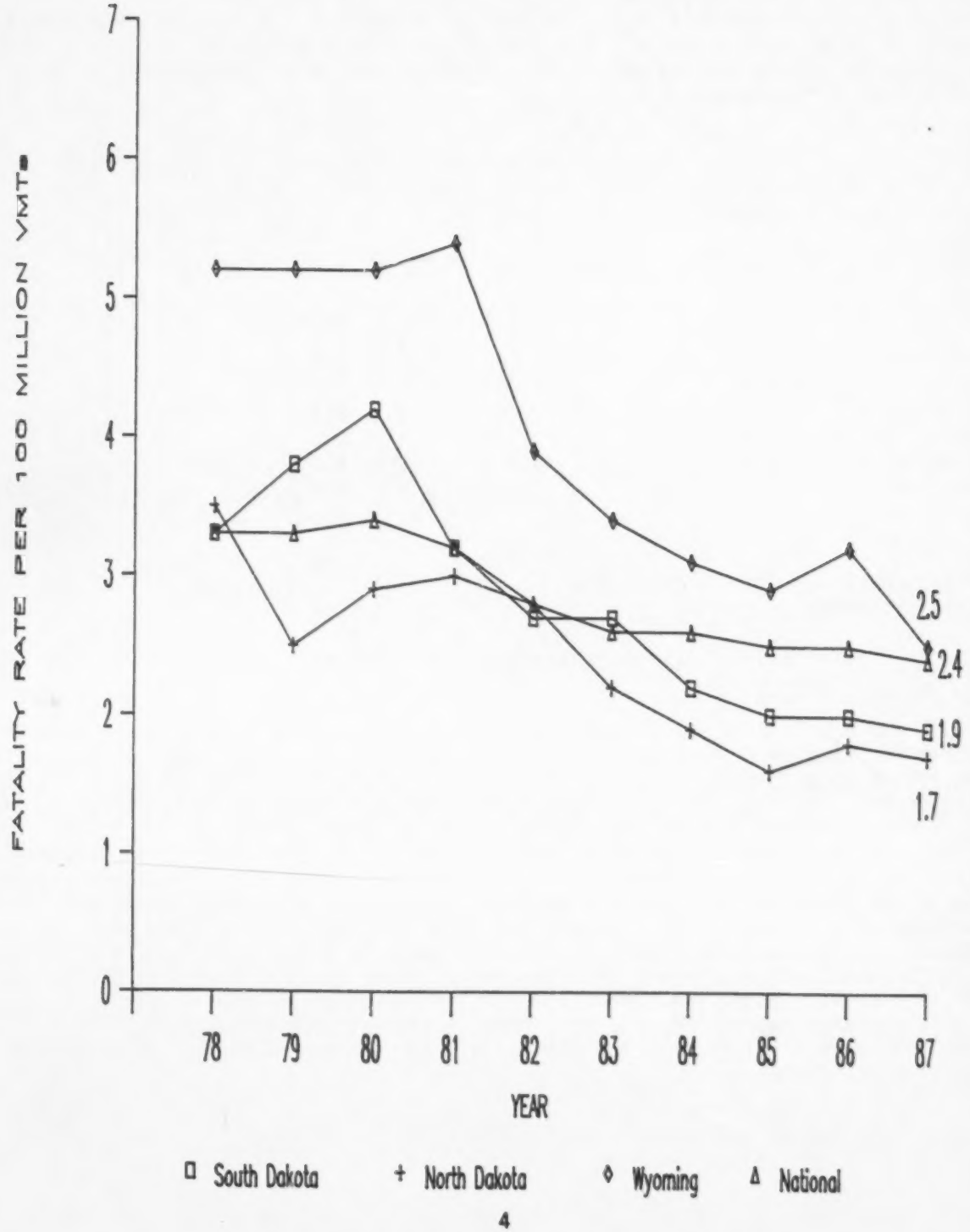


TABLE 2-2
SOUTH DAKOTA YEARLY COMPARISON
OF MOTOR VEHICLE TRAFFIC FATALITIES, INJURIES,
ACCIDENTS, MILES TRAVELED, & REGISTERED MOTOR VEHICLES

Year	Fatalities	Rate[1]	Injuries	Total Accd.	Fatal Accd.	Injury Accd.	PDO[2] Accd.	Miles[3] Traveled +(000,000)	Registered Motor Vehicles +(000)
1960	233	6.94	3,656	7,187	191	2,121	4,875	3,359	351
1961	228	6.75	3,848	7,281	184	2,313	4,784	3,379	361
1962	246	6.77	4,248	8,805	191	2,592	6,022	3,631	377
1963	220	5.83	4,123	8,874	185	2,530	6,159	3,776	386
1964	270	7.03	4,569	9,349	211	2,816	6,322	3,839	387
1965	244	6.13	4,685	10,015	194	2,880	6,941	3,983	396
1966	265	6.50	5,072	10,821	205	3,087	7,529	4,075	402
1967	224	5.41	5,286	12,154	183	3,250	8,721	4,142	407
1968	255	5.91	5,612	14,061	215	3,396	10,450	4,313	409
1969	296	6.79	5,921	16,565	219	3,584	12,762	4,361	422
1970	238	5.12	5,492	16,165	189	3,395	12,581	4,648	427
1971	262	5.36	6,705	16,995	210	4,152	12,633	4,884	444
1972	294	5.83	6,718	17,883	235	4,267	13,381[2]	5,039	467
1973	286	5.57	6,774	14,985	228	4,321	10,436[2]	5,136	494
1974	229	4.47	6,211	11,727	203	4,077	7,447[2]	5,126	519
1975	198	3.82	6,769	15,146	163	4,398	10,585[2]	5,186	533
1976	224	4.07	7,423	15,755	188	4,840	10,727	5,503	554
1977	211	3.67	7,603	18,020	180	5,013	12,827[2]	5,754	575
1978	194	3.33	7,861	18,085	168	5,263	12,654[2]	5,830	599
1979	211	3.76	7,189	16,059	169	4,826	11,064	5,614	616
1980	228	4.18	7,147	14,845	188	4,770	9,887	5,456	622
1981	177	3.17	6,771	14,375	162	4,614	9,599	5,582	637
1982	148	2.68	6,174	14,605	129	4,192	10,284	5,528[3]	640
1983	175	2.73	6,287	14,971	147	4,175	10,649	6,406	655
1984	143	2.24	6,158	15,093	132	4,297	10,664	6,394	669
1985	130	2.02	6,240	15,435	109	4,229	11,097[2]	6,443	674
1986	134	1.98	6,008	13,714	118	4,105	9,491[2]	6,762	686
1987	134	1.87	6,221	13,083	107	4,173	8,803	7,171	711

[1]Number of fatalities per 100 million vehicle miles traveled.

[2]Prior to July 1, 1973 the threshold for a reportable property damage only (PDO) accident was $100 to one person's property. July 1, 1973 the PDO amount was increased to $250.

January 1, 1975, the PDO threshold definition changed to accumulated property damage of $250 or more. July 1, 1978 the PDO threshold was increased to $400 accumulated property damage.

July 1, 1986, the PDO threshold definition changed to $500 damage to any one person's property or $1000 accumulated property damage per accident.

[3]1983 the formula for computing VMTs was adjusted, resulting in an approximate 9.5% increase in annual VMTs.

Source: Department of Transportation: Accident Records

Alcohol Involvement

Alcohol continues to be a significant factor in motor vehicle accidents, especially the serious accidents involving death and injuries (see TABLE 2-3 and FIGURES 2-2 and 2-3). In 1987, just under half of the motor vehicle fatalities and about one out of five injuries were the result of an alcohol-related accident.

TABLE 2-3
ALCOHOL INVOLVED ACCIDENTS AS PERCENT OF ALL ACCIDENTS
1981-1987

	1981	1982	1983	1984	1985	1986	1987
Total Accidents	18.0 (2591)	14.0 (2044)	13.6 (2029)	13.2 (1992)	11.2 (1728)	11.5 (1577)	10.8 (1416)
Fatal Accidents	61.7 (100)	59.7 (77)	49.0 (72)	53.8 (71)	51.4 (56)	54.2 (64)	48.6 (52)
Injury Accidents	27.4 (1266)	22.2 (930)	22.4 (935)	20.8 (894)	19.2 (810)	18.7 (769)	17.5 (731)
PDO Accidents	12.8 (1225)	10.1 (1037)	9.6 (1022)	9.6 (1028)	7.8 (862)	7.8 (744)	7.2 (633)
Fatalities	62.1 (110)	58.1 (86)	50.9 (89)	53.1 (76)	53.1 (69)	55.2 (74)	49.3 (66)
Injuries	29.0 (1964)	23.5 (1453)	24.3 (1528)	22.3 (1371)	20.5 (1280)	20.2 (1214)	19.0 (1183)

NOTE: 1980-1982: Alcohol involvement for PDO and Injury Accidents is based on an indication of alcohol use as reported by the investigating officer.

Alcohol involvement for Fatal Accidents is based upon a positive BAC result and/or indication of alcohol use as reported by the investigating officer.

1983-1987: Fatal, Injury and Property Damage Accidents - At least one driver, pedestrian or bicycle driver had been drinking in the opinion of the investigating officer.

Source: Department of Transportation: Accident Records

FIGURE 2–2 1987 TRAFFIC FATALITIES

Alcohol Related vs Non Alcohol Related

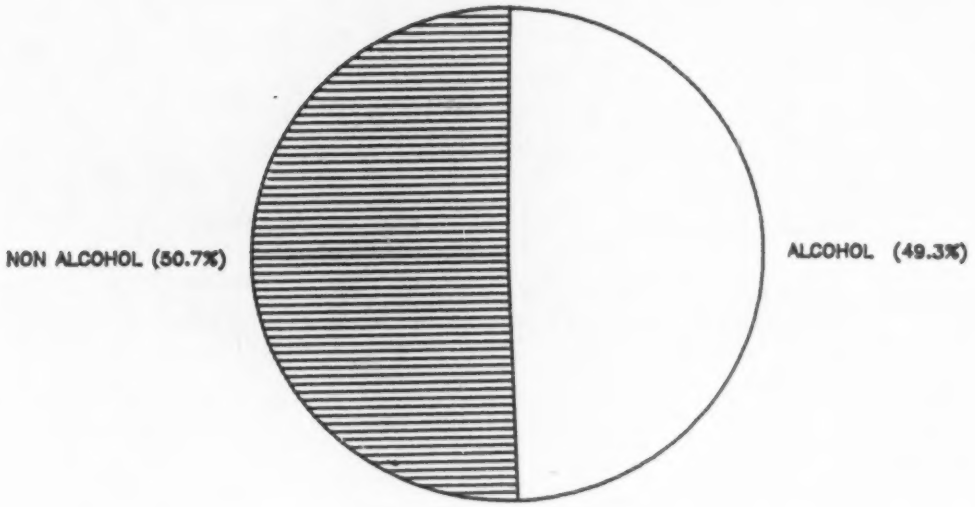
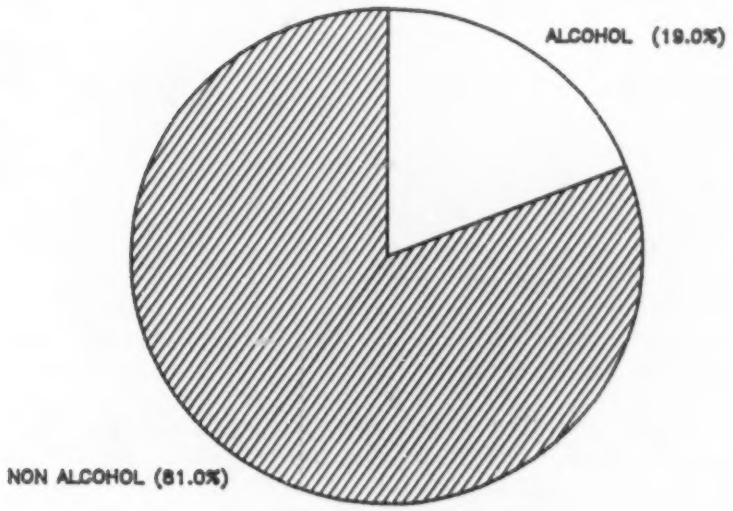


FIGURE 2–3 1987 TRAFFIC INJURIES

Alcohol Related vs Non Alcohol Related



The State of South Dakota initiated a statewide effort during 1981 to increase the DWI enforcement and public awareness efforts. The numbers of persons killed and injured in alcohol-related accidents have declined since 1981. The following accident and arrest data is presented to quantify the reduction of alcohol-related fatal and injury accidents and to compare that reduction to the nonalcohol-related accident experience (see TABLE 2-4).

TABLE 2-4
ACCIDENT AND ARREST ACTIVITY
1979 - 1987

	FATAL ACCIDENTS		FATAL & INJURY ACCIDENTS		
	ALCOHOL RELATED	NONALCOHOL RELATED	ALCOHOL RELATED	NONALCOHOL RELATED	DWI ARRESTS
1979	94	75	1216	3779	4136
1980	105	83	1391	3567	4151
1981	100	62	1366	3410	5068
1982	77	52	1007	3314	6842
1983	72	75	1007	3315	9840
1984	71	61	965	3464	9972
1985	56	53	866	3472	9363
1986	64	54	833	3390	9434
1987	52	55	783	3497	8097

Source: Department of Transportation: Accident Records

FIGURE 2-4 presents the annual counts of DWI arrests, alcohol-related fatal and injury accidents, and nonalcohol-related fatal and injury accidents for 1979 to 1987. FIGURE 2-5 presents the alcohol-related and nonalcohol-related fatal accident experience.

To facilitate comparison of 1987 accident and arrest experience, a baseline three-year average (1979-81) and the previous three-year average (1984-86) are presented in TABLE 2-5. Additionally, TABLE 2-5 includes the percentage change in 1987 accident and arrest levels from the baseline three-year average, the previous three-year average, and the prior year. See Figure 2-6 for a graphic comparison of the percentage change of the 1987 levels.

There were 52 alcohol-related fatal accidents during 1987, which compares to 64 in 1986. The previous three-year average was 64 and the baseline average was 100. Alcohol-related fatal accidents were down 48 percent when compared to the baseline three-year average, while nonalcohol-related fatal accidents declined 25 percent during the same period.

There were 783 alcohol-related fatal and injury accidents during 1987, which compares to 833 in 1986. The previous three-year average was 888 or a 12 percent decrease in 1987. Nonalcohol-related fatal and injury accidents in 1987 increased two percent from the previous three-year average.

There were an estimated 8,097 DWI arrests in 1987. This level is down (16%) from the previous three-year average, but up 82 percent from the baseline period (1979-1981).

FIGURE 2–4 F&I ACCIDENTS AND DWIs

1979 – 1987

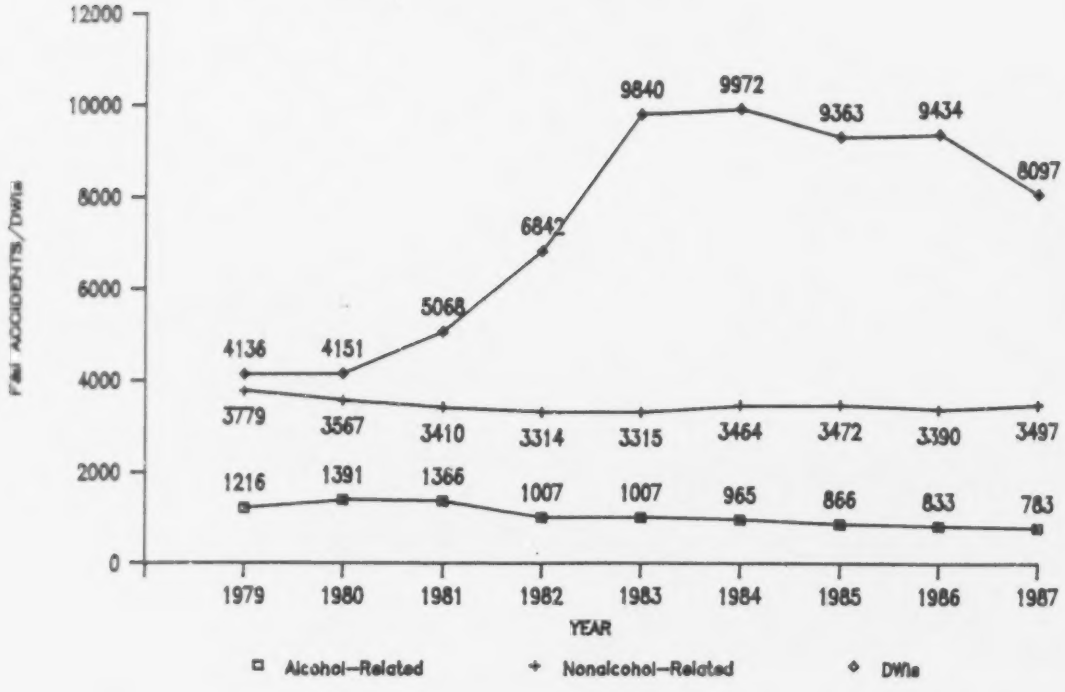


FIGURE 2–5 FATAL ACCIDENTS

1979 – 1987

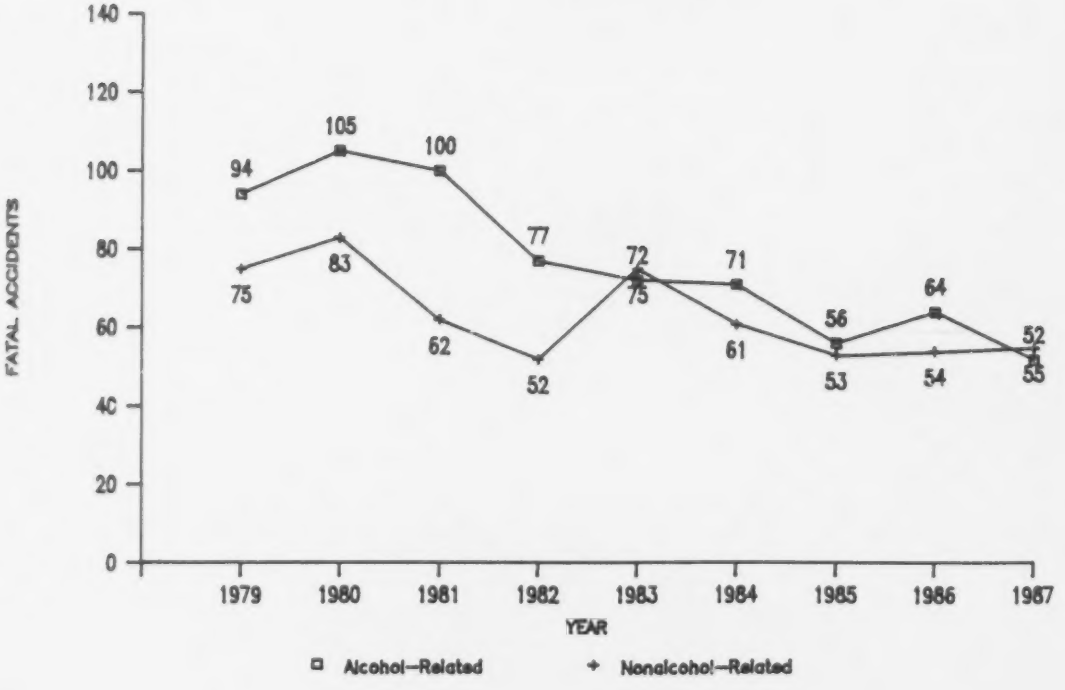
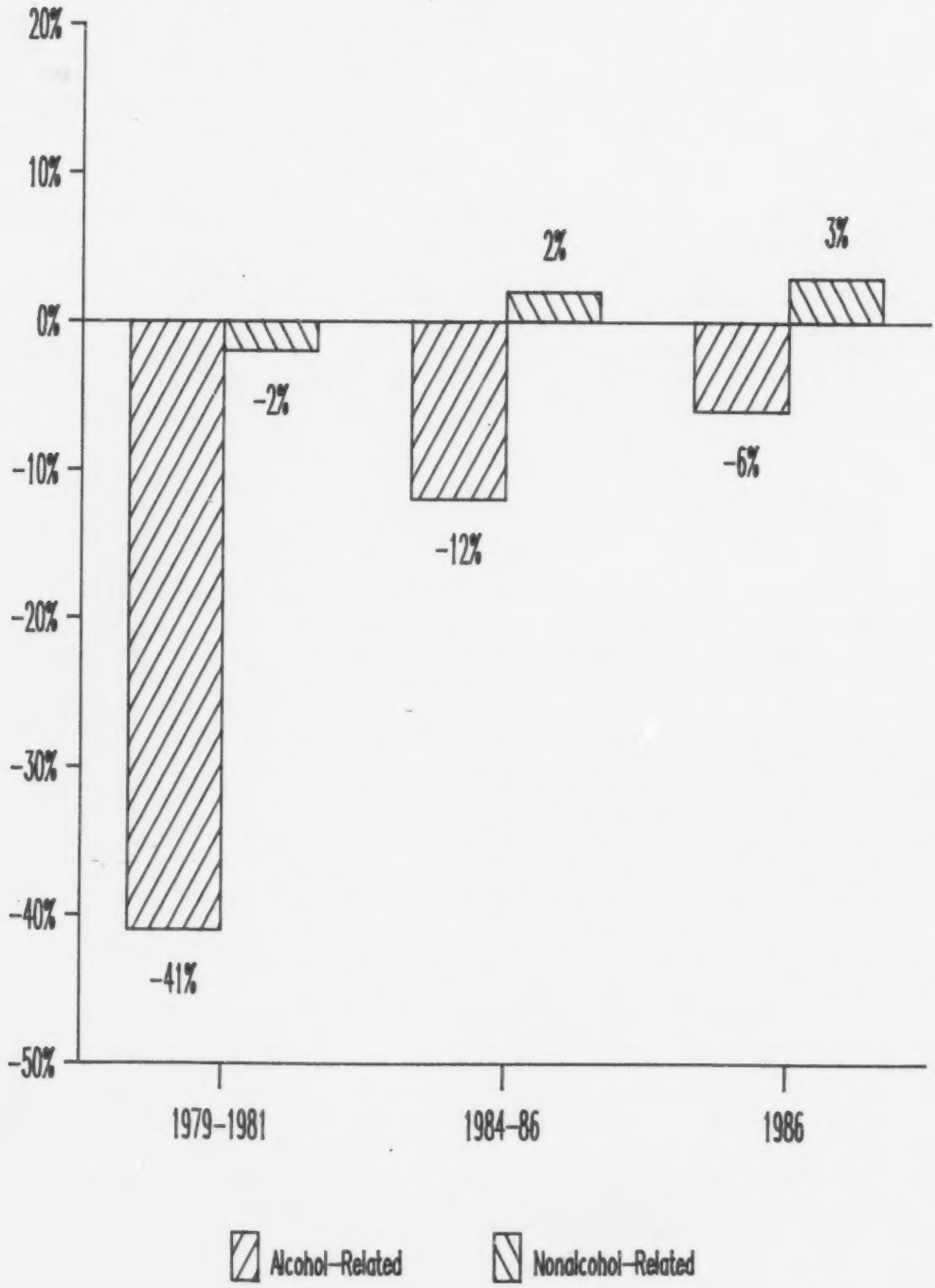


TABLE 2-5
COMPARISION OF ACCIDENT AND ARREST ACTIVITY
(1979 - 1987)

	Baseline 3-Yr. Avg. (1979-81)	Previous 3-Yr. Avg. (1984-86)	1986	1987	PERCENTAGE CHANGE OF 1987 LEVELS COMPARED TO: Baseline 3-Yr. Avg. (1979-81)	Previous 3-Yr. Avg. (1984-86)	1986
Fatal Accidents							
Alcohol-Related	99.7	63.7	64	52	-48%	-18%	-19%
Nonalcohol-Related	73.3	56.0	54	55	-25%	-2%	+2%
Fatal & Injury Accidents							
Alcohol-Related	1324.3	888.0	833	783	-41%	-12%	-6%
Nonalcohol-Related	3585.3	3442.0	3390	3497	-2%	+2%	+3%
DWI's	4451.7	9589.7	9434	8097	+82%	-16%	-14%

FIGURE 2-6 1987 F&I ACCIDENT LEVEL

COMPARED TO 1979 - 1986 LEVELS



Restraint Usage

Observation Survey

In 1987, the South Dakota Office of Highway Safety conducted an observation survey of seatbelt use in eleven South Dakota communities. Over 16,129 South Dakota motor vehicles with a total of 26,122 occupants were observed in these communities between May and September of 1987. A statewide estimate of restraint use was calculated using procedures based upon an average estimate from individual sampling communities that has been adjusted for population size and for roadtype. In this procedure, restraint use levels observed in the most populated areas and on the most traveled roads of the state are given the most "weight" in an overall average.

To find the 1987 estimate for restraint use in South Dakota, percentages of restraint use for each city/county area were calculated for four roadway types: city, county road, highway and interstate. Individual city/county rates for the four roadtypes were weighted (multiplied) by county population size. For this study, the proportion of the county population to that of the total state population was used as the weighting factor. When the weighted proportions of restraint use for roadtype for all 11 cities/counties were averaged together, the following use rates were found:

16.2% = Use Rate for City Roads and Streets
15.6% = Use Rate for County Roads
18.0% = Use Rate for Primary Highways
24.6% = Use Rate for Interstate Highways

These estimates of restraint use for roadtype were then multiplied by a weighting factor for the number of vehicle miles traveled (VMT) by roadtype in South Dakota. The following weights were derived from VMT estimates provided by the South Dakota Department of Transportation:

31% = VMT for Local Streets, Urban County, Highway and Interstate Roads
17% = VMT for Rural County and Secondary Roads
34% = VMT for Rural Primary Highways
18% = VMT for Rural Interstate Highways

The final state estimate was derived by the following calculations:

(16.2% x 31%) + (15.6% x 17%) + (18.0% x 34%) + (24.6% x 18%) /100

= **18.2% Estimated Statewide Rate of Occupant Restraint Use**

In summary, it was estimated that approximately 18 percent of occupants traveling on South Dakota public roads wore safety restraints during the time period in which the 1987 survey was conducted. Similar procedures were used to formulate a state estimate of restraint use for age group of occupants for all roadtypes combined. Individual city/county restraint use rates for three age groups were weighted for county population size and then averaged together. The following statewide estimates were obtained:

24.5% = Use Rate for Children 0 - 4 Years of Age
12.6% = Use Rate for Children 5 - 19 Years of Age
17.6% = Use Rate for Adults 20 Years and Older

Thus, three years after passage of a mandatory child restraint law, approximately 25 percent of children less than five years of age were protected by an occupant restraint while traveling South Dakota roads. See FIGURES 2-7 and 2-8 for a graphic portrayal of statewide occupant restraint use estimates for the 1987 survey.

Rankings of Cities/Counties By Restraint Use Rates

Occupant restraint use varied widely among the survey communities of South Dakota. The following table shows the cities/counties ranked by highest to lowest occupant restraint use rates for three age groups. The cities/counties of Winner-Tripp, Faulkton-Faulk, Isabel-Dewey, and Kadoka-Jackson were not ranked for the category of "Children 0 - 4" because less than 30 children were observed in these locations (see FIGURE 2-9).

Children 0 - 4 Yr		Children 5 - 19 Yr		Adults 20 Yr & Older	
Rapid City-Pennington	43%	Rapid City-Pennington	21%	Rapid City-Pennington	25%
Watertown-Codington	28%	Sioux Falls-Minnehaha	14%	Sioux Falls-Minnehaha	20%
Vermillion-Clay	21%	Isabel-Dewey	10%	Kadoka-Jackson	16%
Yankton-Yankton	21%	Vermillion-Clay	9%	Watertown-Codington	15%
Sioux Falls-Minnehaha	19%	Watertown-Codington	9%	Faulkton-Faulk	13%
Pierre-Hughes	16%	Yankton-Yankton	7%	Vermillion-Clay	13%
Aberdeen-Brown	13%	Faulkton-Faulk	5%	Pierre-Hughes	11%
		Pierre-Hughes	5%	Isabel-Dewey	10%
		Aberdeen-Brown	5%	Aberdeen-Brown	9%
		Winner-Tripp	2%	Yankton-Yankton	9%
		Kadoka-Jackson	0%	Winner-Tripp	4%

FIGURE 2–7 RESTRAINT USE

1987 STATEWIDE ESTIMATE

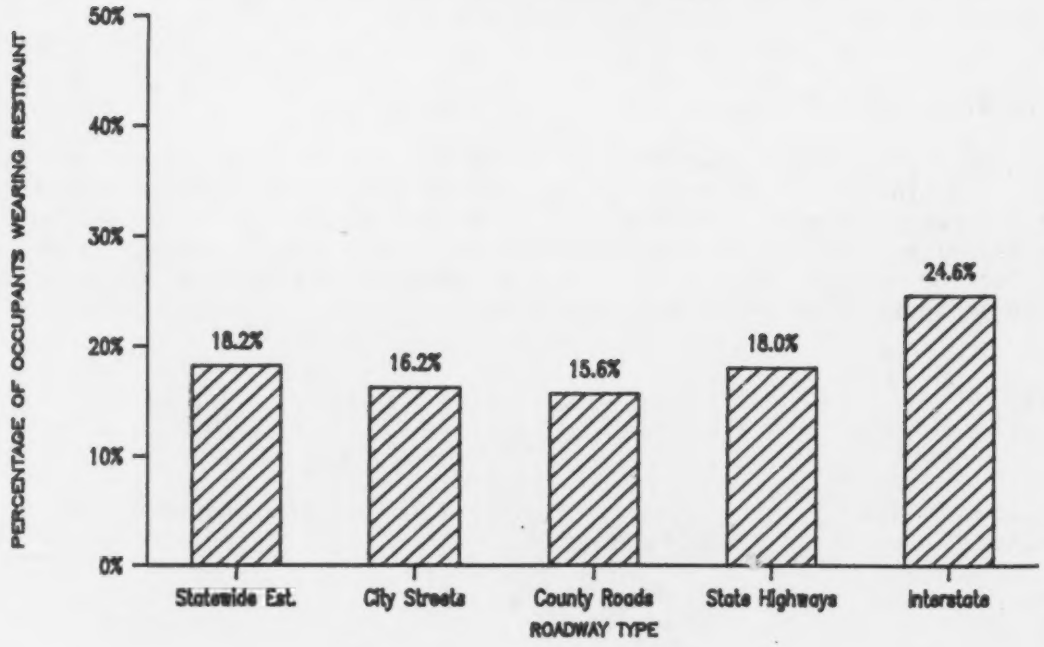
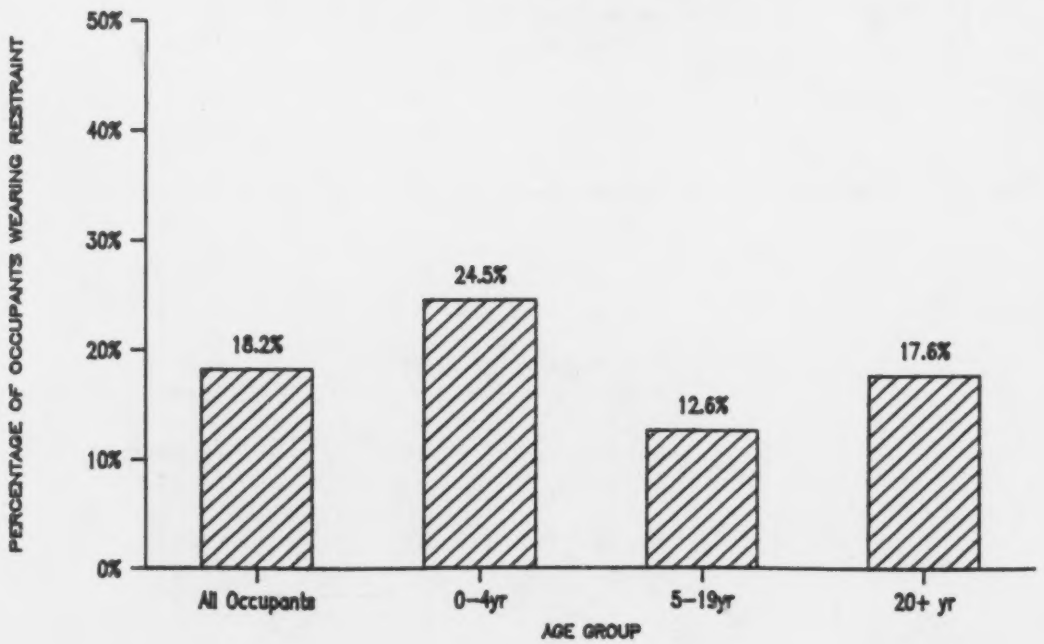


FIGURE 2–8 ESTIMATES OF RESTRAINT USE

1987 STATEWIDE ESTIMATE



Only about one-fourth of children under age five being transported on public roads are protected by a car seat or seatbelt. A comparison of annual survey results showed that child restraint use on statewide city roads significantly decreased from 39 percent in 1985 to 33 percent in 1986 to the current level of 26 percent. Analysis of individual cities showed that the largest drop in child restraint use occurred in Sioux Falls from over 50 percent in 1986 to 19 percent in 1987. Child restraint use did increase in a few cities (Rapid City, Watertown), but rates in most other survey cities were either the same or a few percentage points lower than the 1986 rates. The 1987 rates for Rapid City should be viewed with some caution as only three-fourths of the survey hours were completed. Although the rates for older children and adult occupants were based upon stable sample sizes, the rate for young children was based upon a marginally acceptable sample size of 62.

Rapid City-Pennington County had the highest use rate for older children (21%) and for adults (25%), followed by Sioux Falls-Minnehaha County with rates of 14 percent for older children and 20 percent for adults. The areas of Kadoka-Jackson County, Aberdeen-Brown County, and Winner-Tripp County all showed very low rates of restraint use for older children and adults (0% - 6%). Comparisons of city street rates for 1985 and 1986 showed that restraint use for older children and adults had significantly increased in Sioux Falls, Yankton, Pierre, and Vermillion.

In summary, the positive finding from the 1987 seatbelt and child restraint survey is that restraint use by older children and adults is increasing in the state, albeit at a slow rate. The negative finding is that restraint use for children four years and younger is approximately 25 percent, even though state law mandates 100 percent use for this age group. The level of child restraint use has decreased in the past year and remained nearly the same since 1985.

According to these results, the South Dakota mandatory child restraint law has had a minimal impact on citizens of the state. Three years after implementation of the law, three-fourths of young children being transported on South Dakota roads are not protected by restraints. The low rates persist even in regions with active community restraint education and promotion programs. On January 1, 1988, failure to comply with the law is considered a petty offense with a $20 fine. If cited, persons may avoid a fine by producing proof of owning an appropriate child restraint. This strenghthening of the law may eventually reverse the declining compliance rate.

Restraint Usage - Accident-Involved Drivers/Injured Children

The use of safety equipment is reported on all motor vehicle drivers in an accident and only on those passengers who are injured. During 1987, 19.6 percent of the motor vehicle drivers in accidents were using safety restraints (see TABLE 2-6). Fifty-five drivers of motor vehicles were killed while not using any safety restraint, while six drivers were killed while using some type of safety restraint (does not include drivers of motorcycles, mopeds, and snowmobiles). Over 83 percent (2727) of the injured drivers were not using safety restraints.

TABLE 2-6
SAFETY RESTRAINT USAGE
ACCIDENT-INVOLVED DRIVERS
1983 - 1987

DRIVER AGE	USAGE RATE 1983	1984	1985	1986	1987
14-15	3.2%	4.6%	4.2%	7.6%	8.5%
16-17	2.0%	3.7%	4.8%	6.8%	9.3%
18-20	4.3%	5.0%	7.0%	9.9%	14.1%
21-24	6.4%	7.7%	10.9%	13.4%	19.0%
25-34	8.5%	12.1%	14.3%	17.8%	22.9%
35-44	8.3%	11.7%	14.4%	18.6%	26.4%
45-54	8.7%	11.1%	13.1%	17.4%	24.0%
55-64	6.9%	10.1%	12.2%	17.2%	22.7%
65-Over	5.8%	8.4%	9.7%	14.5%	19.5%
Total	6.5% (1330)	8.9% (1805)	11.1% (2363)	14.6% (2718)	19.6% (3482)

Source: Department of Transportation: Accident Records

The increased usage of safety restraints by accident-involved drivers is an indicator that usage is increasing in South Dakota across all age groups (See Figure 2-10).

Motor vehicle occupants from birth through four years of age accounted for three fatalities during 1987, which compares to four fatalities in 1986 and the previous three-year average of 3.7 (see TABLE 2-7). One of the children killed was restrained.

There were 146 children (birth through 4 years) injured in 1987, which compares to 121 in 1986 and the three-year average of 128.

TABLE 2-7
FATALITIES & INJURIES TO MOTOR VEHICLE OCCUPANTS
UNDER 5 YEARS OF AGE

YEAR	FATALITIES	SERIOUS INJURY	SLIGHT INJURY	TOTAL NONFATAL INJURIES
1981	0	107	44	151
1982	3	85	47	132
1983	5	86	63	149
1984	3	78	61	139
1985	4	74	50	124
1986	4	70	51	121
1987	3	87	59	146

Source: Department of Transportation: Accident Records

FIGURE 2-9 RESTRAINT USAGE 1987

Selected Counties

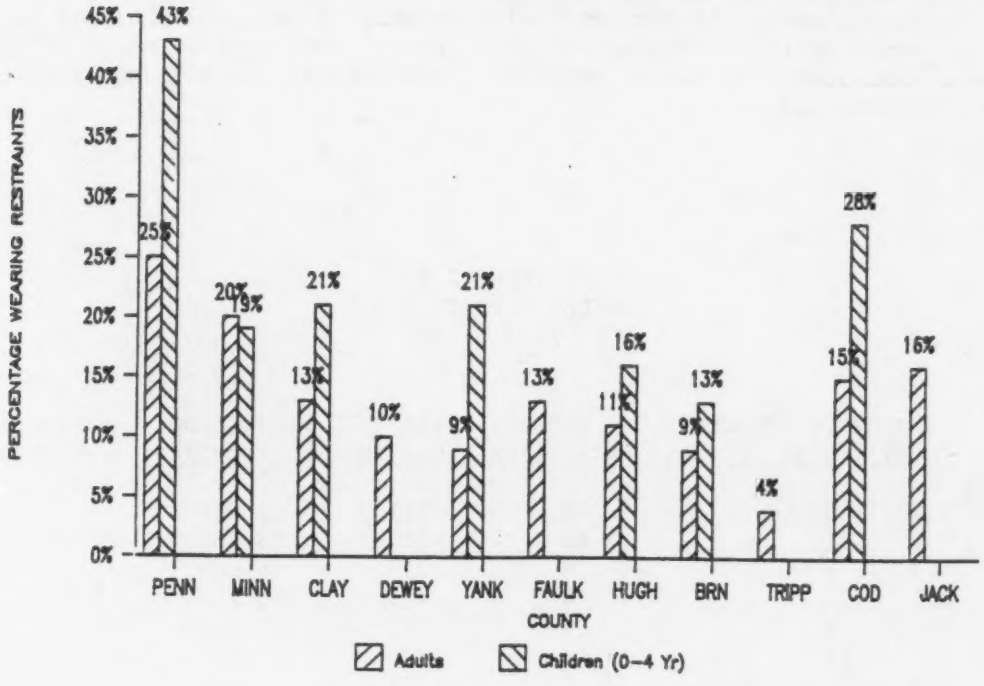
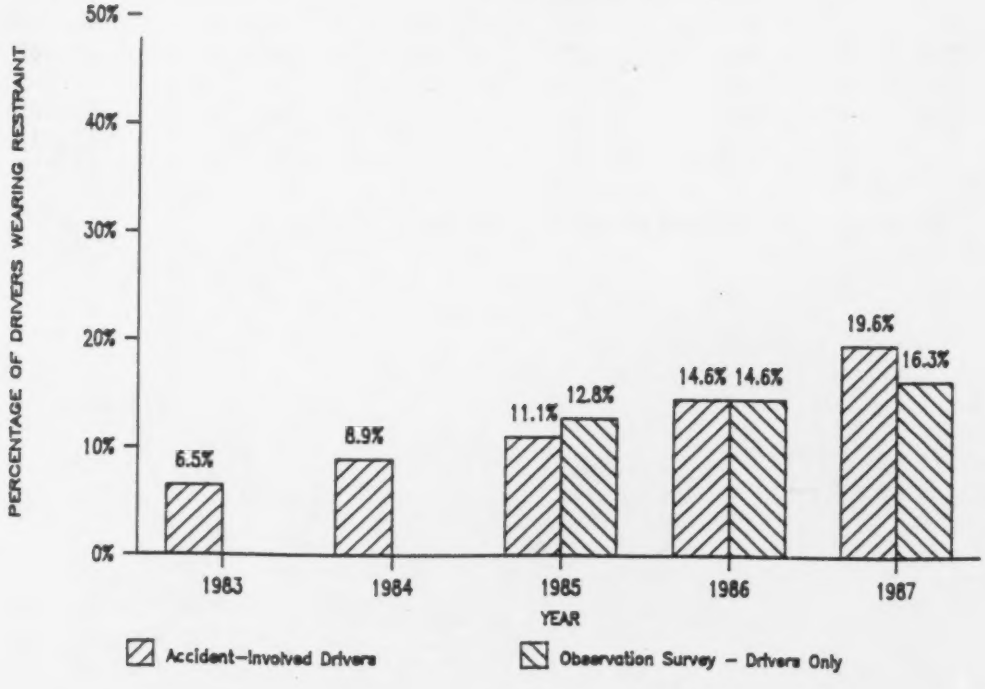


FIGURE 2-10 RESTRAINT USE

FOR DRIVERS BY YEAR



Cycle and Pedestrian Accidents

The following tables provide a yearly comparison of South Dakota's motorcycle, pedestrian, and bicycle accidents, injuries, and fatalities from 1970 through 1987. Moped accidents are included with motorcycle accidents. There has been one fatal moped accident recorded in South Dakota and the the number of injuries is small. See pages 49-54 for additional motorcycle, pedestrian, and bicycle accident information.

TABLE 2-8
MOTORCYCLE ACCIDENTS
1970 - 1987

Year	Motorcycle Accidents Total	Fatal	Injury	Motorcyclists Fatalities	Injuries	Registered Motorcycles	Licensed Motorcyclists
1970	217	8		8	211	11,964	
1971	336	11		13	342	13,865	
1972	314	6		8	312	16,605	
1973	395	13		14	425	19,737	
1974	344	8		9	372	22,964	
1975	377	14	321	14	388	23,980	
1976	465	9	402	9	501	25,058	
1977	495	17	419	19	529	26,560	
1978	523	14	456	14	560	27,590	34,225
1979	597	21	522	22	664	31,102	37,286
1980	707	17	608	18	763	35,045	41,431
1981	697	15	598	15	729	38,265	43,170
1982	548	12	473	13	581	38,418	Not Available
1983	573	12	489	12	591	39,255	45,544
1984	564	10	488	10	567	38,956	45,763
1985	551	14	469	15	569	37,905	45,805
1986	475	10	405	10	492	36,036	45,210
1987	399	13	347	14	417	33,800	44,956

Source: Department of Transportation: Accident Records

TABLE 2-9
PEDESTRIAN FATALITIES AND INJURIES
1970 - 1987

Year	Fatalities	Injuries
1970	17	158
1971	15	170
1972	30	199
1973	21	161
1974	25	158
1975	11	179
1976	24	158
1977	21	164
1978	15	185
1979	16	167
1980	21	162
1981	20	130
1982	16	146
1983	20	139
1984	14	139
1985	8	136
1986	15	165
1987	7	126

Source: Department of Transportation: Accident Records

TABLE 2-10
BICYCLE FATALITIES AND INJURIES
1970 - 1987

Year	Fatalities	Injuries
1970	3	67
1971	4	90
1972	2	94
1973	4	82
1974	2	115
1975	1	108
1976	3	99
1977	7	89
1978	3	82
1979	4	96
1980	0	78
1981	0	83
1982	1	93
1983	1	99
1984	4	95
1985	3	119
1986	1	115
1987	1	157

Source: Department of Transportation: Accident Records

Holiday Counts

TABLE 2-11 provides a yearly comparison of South Dakota motor vehicle accident experience during major holiday observances. These counts are frequently requested and reported.

TABLE 2-11
ACCIDENTS DURING HOLIDAYS
1976 - 1987

Holiday	Total Hours	Total Accd.	Fatal Accd.	Injury Accd.	Fatalities	Injuries
MEMORIAL DAY*						
1976	78	135	1	47	1	74
1977	78	147	1	46	1	75
1978	78	146	1	54	1	84
1979	78	144	3	60	3	91
1980	78	128	5	46	12	71
1981	78	129	3	48	3	65
1982	78	129	2	45	2	75
1983	78	119	4	43	4	77
1984	78	110	0	36	0	54
1985	78	124	3	44	3	65
1986	78	142	3	37	3	56
1987	78	97	1	28	1	47
FOURTH OF JULY						
1976	78	175	3	51	3	79
1977	78	169	5	70	6	115
1978	102	241	2	108	3	171
1979	30	60	0	27	0	40
1980	78	166	3	56	3	86
1981	78	174	2	63	2	97
1982	78	160	1	64	1	106
1983	78	136	1	46	1	82
1984	30	61	1	22	1	33
1985	102	170	1	58	1	93
1986	78	109	4	47	4	94
1987	78	124	1	53	4	74
LABOR DAY						
1976	78	181	4	68	4	93
1977	78	179	3	70	3	108
1978	78	150	2	66	2	112
1979	78	140	1	55	1	83
1980	78	108	2	35	2	65
1981	78	149	2	68	2	105
1982	78	134	1	62	1	100
1983	78	132	5	48	6	71
1984	78	111	3	42	3	64
1985	78	127	3	40	3	63
1986	78	106	1	34	1	62
1987	78	135	2	44	3	73

*Nationally Observed

Holiday	Total Hours	Total Accd.	Fatal Accd.	Injury Accd.	Fatalities	Injuries
THANKSGIVING						
1976	102	228	2	56	2	96
1977	102	278	0	66	0	95
1978	102	316	2	76	2	122
1979	102	223	3	48	3	67
1980	102	192	3	63	8	94
1981	102	197	0	39	0	54
1982	102	184	2	47	2	67
1983	102	210	2	44	3	71
1984	102	194	2	56	2	83
1985	102	272	0	51	0	76
1986	102	162	3	37	3	63
1987	102	255	2	56	3	91
CHRISTMAS						
1976	78	116	5	37	10	71
1977	78	206	1	58	4	89
1978	78	149	1	40	1	66
1979	102	162	4	53	4	80
1980	102	222	3	58	3	92
1981	78	103	3	21	3	42
1982	78	198	1	42	1	72
1983	78	155	0	30	0	47
1984	102	195	0	35	0	52
1985	54	97	1	13	2	25
1986	102	88	1	28	1	51
1987	102	209	1	63	2	108
NEW YEARS						
1976-77	78	197	2	43	2	56
1977-78	78	254	4	61	4	94
1978-79	78	139	1	34	1	44
1979-80	102	204	3	62	5	91
1980-81	102	169	1	58	1	106
1981-82	78	147	1	32	1	42
1982-83	78	137	2	29	2	39
1983-84	78	166	0	41	0	59
1984-85	102	132	2	24	2	39
1985-86	54	98	1	19	1	27
1986-87	102	138	1	30	1	49
1987-88	102	151	0	33	0	43

Source: Department of Transportation: Accident Records

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III. 1987 MOTOR VEHICLE ACCIDENT PROFILE

Introduction

This section profiles the reported motor vehicle traffic accidents for 1987. Information will be given on where the accidents are occurring, when accidents happen, who is involved, and factors that contribute to accidents or why they are occurring. **Column percentages may not total 100 percent due to rounding error.**

During 1987, there were 13,083 reported motor vehicle traffic accidents, the majority of accidents being property damage only 8,803 (67%). Injury accidents accounted for 4,173 (32%) of the accidents, while 107 (1%) were fatal accidents. There were 6,221 persons injured and 134 persons killed in accidents during 1987 (see TABLE 3-1).

TABLE 3-1
FATALITIES AND SEVERITY OF INJURIES OF DRIVERS, PASSENGERS, PEDESTRIANS, AND BICYCLISTS
1987

	Incapac. Injuries		Nonincapac. Injuries		Possible Injuries		Total Nonfatal Injuries		Total Fatalities	
	No.	%	No.	%	No.	%	No.	%	No.	%
Drivers	726	58.1	1,663	60.7	1,482	66.3	3,871	62.2	79	59.0
Passengers	428	34.3	950	34.7	692	31.0	2,070	33.3	47	35.1
Pedestrians	58	4.6	45	1.6	23	1.0	126	2.0	7	5.2
Bicycle Dr.	37	3.0	80	2.9	37	1.7	154	2.5	1	0.7
Total	1,249	100	2,738	100	2,234	100	6,221	100	134	100

Note: Incapacitating - severe lacerations, broken limbs or unable to leave the scene of the accident without assistance.

Nonincapacitating - minor lacerations, lumps on the head, abrasions and bruises.

Possible - momentary unconsciousness, limping, nausea, or complaint of pain.

Source: Department of Transportation: Accident Records

TABLE 3-2 provides information on persons killed and injured by method or mode of transportation. During 1987, one-half of the fatalities and nearly two-thirds of the injuries occurred to occupants of passenger cars. Occupants of pickups and vans accounted for over one-fourth of the fatalities. Additionally, in 1987 seven pedestrians, 14 motorcyclists, one bicyclist, and two motor home occupants were killed (see FIGURES 3-1 and 3-2).

TABLE 3-2
FATALITIES AND INJURIES BY MODE OF TRANSPORTATION
1987

	Fatalities		Injuries	
	No.	%	No.	%
Passenger Cars	67	50.0	3,941	63.3
Pickups, Vans	36	26.9	1,357	21.8
Motorcycle, Moped	14	10.4	417	6.7
Pedestrians	7	5.2	126	2.0
Trucks (All)	4	3.0	164	2.6
Other	3	2.2	56	0.9
Farm Machinery	2	1.5	3	0.0
Bicycle	1	0.7	157	2.5
Total	134	100	6,221	100

Note: Other Includes Bus, Motor Home, Heavy Equipment, Other Type Motor Vehicles.

Source: Department of Transportation: Accident Records

FIGURE 3–1 FATALITIES BY TRAVEL MODE

1987

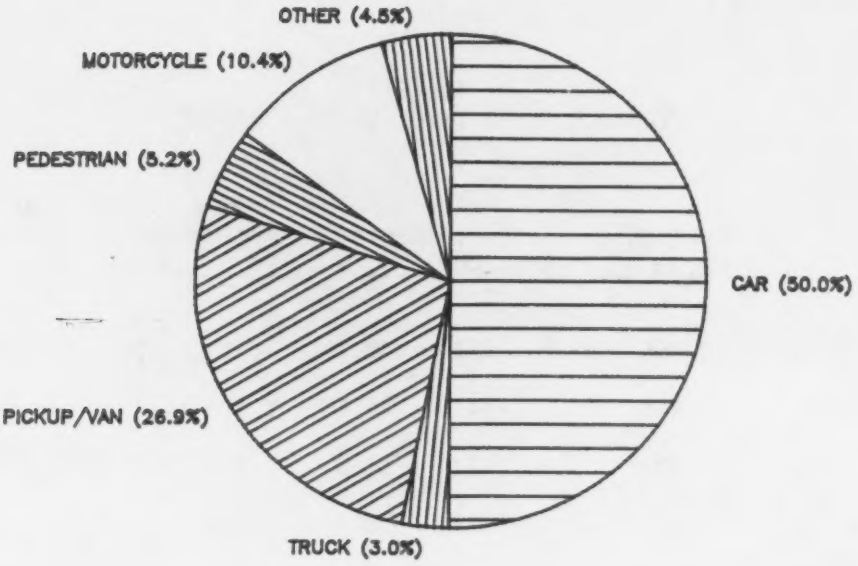


FIGURE 3–2 INJURIES BY TRAVEL MODE

1987

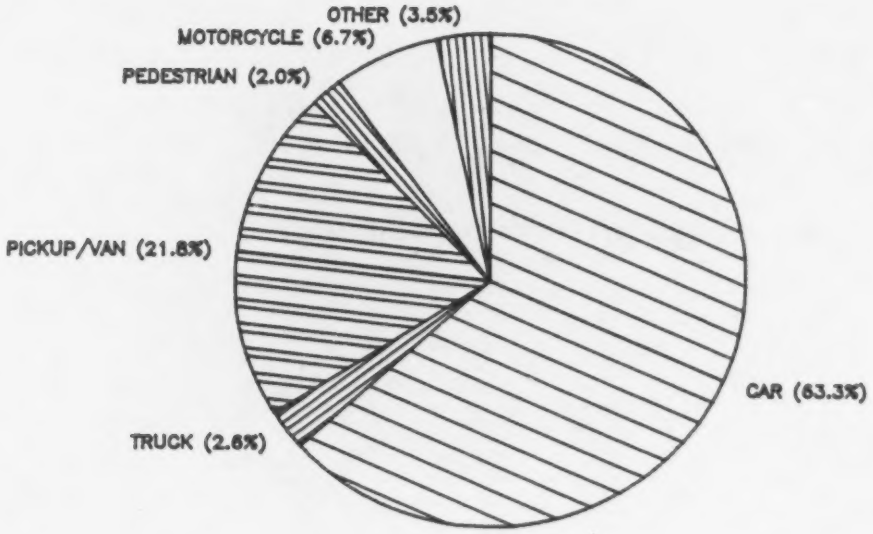


TABLE 3-3 provides information on all accident-involved vehicles by type. Trucks were involved in 17 or 11.0 percent of the vehicles involved in fatal accidents, but truck occupants (see TABLE 3-2 Mode of Transportation) makeup three percent or four of the persons killed. Passenger cars made up nearly one-half of the vehicles involved in fatal accidents and two-thirds of those involved in injury accidents.

TABLE 3-3
VEHICLE TYPES INVOLVED IN ACCIDENTS
1987

	All Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
Passenger Cars	14,266	67.2	74	48.1	4,455	65.5	9,737	68.2
Pickups, Vans	5,465	25.7	41	26.6	1,663	24.4	3,761	26.3
Trucks	833	3.9	17	11.0	245	3.6	571	4.0
Motorcycle	409	1.9	13	8.4	361	5.3	35	0.2
Farm Machinery or Heavy Equipment	83	0.4	5	3.2	25	0.4	53	0.4
Bus	58	0.3	2	1.3	17	0.2	39	0.3
Motor Home	35	0.2	1	0.6	10	0.1	24	0.2
Moped	7	0.0	1	0.6	5	0.1	1	0.0
Snowmobile	0	0.0	0	0.0	0	0.0	0	0.0
Other or Unknown	84	0.4	0	0.0	21	0.3	63	0.4
Total	21,240	100	154	100	6,802	100	14,284	100

Source: Department of Transportation: Accident Records

TABLE 3-4 provides information on the ages of persons killed and injured. Fifty-one percent of the persons killed were under 30, with more 19 year olds killed than any other single age group. The average age of those killed was 36.4. See the Drivers Section beginning on Page 42 for additional information.

TABLE 3-4
FATALITIES AND INJURIES
BY AGE GROUP
1987

	Fatalities		Injuries	
	No.	%	No.	%
0 - 5	4	3.0	217	3.5
6 - 13	4	3.0	410	6.6
14 - 15	2	1.5	351	5.6
16 - 17	8	6.0	661	10.6
18 - 20	15	11.2	759	12.2
21 - 24	17	12.7	731	11.8
25 - 34	28	20.9	1,209	19.4
35 - 44	18	13.4	634	10.2
45 - 54	8	6.0	364	5.9
55 - 64	12	9.0	336	5.4
65-Over	18	13.4	471	7.6
Unknown	0	0	78	1.3
Total	134	100	6,221	100

Source: Department of Transportation: Accident Records

First Harmful Event

The initial incident which causes injury or damage is referred to as the first harmful event. A motor vehicle collision with an object such as another motor vehicle (parked and not parked), a fixed or other object, a pedestrian, an animal, a bicycle, or a railroad vehicle accounted for 88 percent of the first harmful events. The other 12 percent are motor vehicles overturning or other noncollision incidents, such as a person falling out of a motor vehicle (see TABLE 3-5).

TABLE 3-5
FIRST HARMFUL EVENT
1987

First Harmful Event	Total Accidents No.	%	Fatal Accidents No.	%	Injury Accidents No.	%	PDO Accidents No.	%
Motor Vehicle Collision With:								
Another MV (Not Parked)	6,670	51.0	43	40.2	2,178	52.2	4,449	50.5
A Fixed or Other Object	2,212	16.9	26	24.3	762	18.3	1,424	16.2
An Animal	1,539	11.8	1	0.9	64	1.5	1,474	16.7
A Parked Motor Vehicle	806	6.2	0	0.0	110	2.6	696	7.9
A Pedestrian	124	0.9	6	5.6	118	2.8	0	0.0
A Bicyclist	155	1.2	1	0.9	154	3.7	0	0.0
A Railroad Vehicle	20	0.2	0	0.0	15	0.4	5	0.1
Non-Collision (Overturning or Other)	1,557	11.9	30	28.0	772	18.5	755	8.6
Total	13,083	100	107	100	4,173	100	8,803	100

Source: Department of Transportation: Accident Records

Manner of Collision

The most common type or manner of collision between two or more vehicles is an angle collision which usually occur at an intersection. Angle collisions constitute 27.9 percent of the fatal collisions, 37.2 percent of the injury collisions, and 33 percent of the property damage only collisions. Rear-end collisions are second in prevalence accounting for 34.3 percent of the injury collisions and 23.6 percent of the property damage collisions. Head-on collisions are over-represented in fatal accidents where they account for 30.2 percent of the collisions as compared to only 3.7 percent of the total collisions (see TABLE 3-6).

TABLE 3-6
MANNER OF COLLISION FOR ACCIDENTS INVOLVING A COLLISION BETWEEN TWO OR MORE MOTOR VEHICLES
1987

Manner of Collision	Total Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
Rear-End	1,807	27.1	10	23.3	748	34.3	1,049	23.6
Head-On	247	3.7	13	30.2	120	5.5	114	2.6
Angle	2,291	34.3	12	27.9	810	37.2	1,469	33.0
Sideswipe-Same Direction	546	8.2	3	7.0	83	3.8	460	10.3
Sideswipe-Opposite Dir.	105	1.6	0	0.0	23	1.1	82	1.8
Turning Movement	1,352	20.3	5	11.6	369	16.9	978	22.0
Backing Movement	322	4.8	0	0.0	25	1.1	297	6.7
Total	6,670	100	43	100	2,178	100	4,449	100

Source: Department of Transportation: Accident Records

Highway System

The number of reported accidents by highway system is presented in TABLE 3-7. Injury and PDO accidents happened predominately within city limits. City streets and alleys experienced 35 percent of the PDO accidents and 32 percent of the injury accidents. Approximately one in five of the injury and PDO accidents occurred on U.S. and State highway routes within city limits.

Seventy percent of the fatal accidents occurred on noninterstate rural highways with forty-three (43) fatal accidents on U.S./State highways and thirty-two (32) on County/Local roads. Across all categories, the Interstate system experiences less than ten percent of the accidents while accounting for 19 percent of the vehicle miles traveled in 1987 (see FIGURES 3-3 and 3-4).

TABLE 3-7
ACCIDENTS BY TYPE OF HIGHWAY
1987

Type of Highway	Total Accidents Number	%	Fatal Accidents Number	%	Injury Accidents Number	%	PDO Accidents Number	%
Interstate	1,222	9.3	12	11.2	332	8.0	878	10.0
US/State Hwys.-Rural	2,286	17.5	43	40.2	717	17.2	1,526	17.3
Co./Local Rds.-Rural	2,438	18.6	32	29.9	835	20.0	1,571	17.8
US/State Hwys.-City	2,686	20.5	13	12.1	967	23.2	1,706	19.4
City Streets/Alleys	4,451	34.0	7	6.5	1,322	31.7	3,122	35.5
Total	13,083	100	107	100	4,173	100	8,803	100

Source: Department of Transportation: Accident Records

FIGURE 3–3 1987 TRAFFIC ACCIDENTS

By Highway System Type

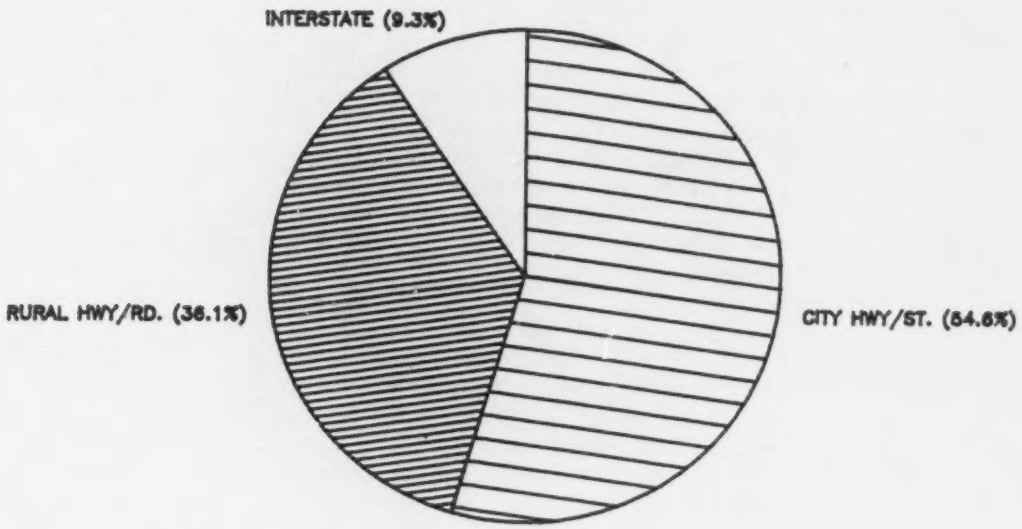
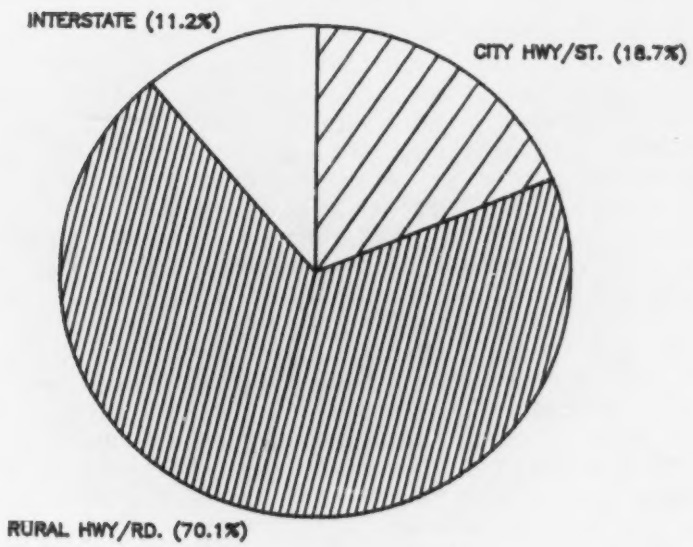


FIGURE 3–4 1987 FATAL TRAFFIC ACCID'S

By Highway System Type



County Summary

TABLE 3-8 provides a summary of all reported accidents by county in South Dakota.

Rural fatal and injury accidents occurred predominately in eleven counties (see TABLE 3-9). Each of these counties reported at least two percent of all rural fatal and injury accidents. The eleven accounted for 50.8 percent of rural fatal and injury accidents and 22.6 percent of all fatal and injury accidents in South Dakota. Pennington County had 12.6 percent of all rural fatal and injury accidents with Minnehaha and Lawrence counties accounting for 7.5 and 5.3 percent, respectively. FIGURE 3-5 presents the percentage involvement of rural fatal and injury accidents and compares this to the percentage of rural vehicle miles traveled in these counties. The most current figures available for rural VMTs by county are from 1983.

City Summary

Reported traffic accidents within South Dakota's cities (population of 2,500 and more) are presented in TABLE 3-10. These cities reported over half of the statewide injury accidents and 13 percent of the fatal accidents. The three largest cities (Sioux Falls, Rapid City, Aberdeen) accounted for two-thirds of fatal and injury accidents and over 60 percent of the property damage only accidents that occurred in cities with populations of 2,500 or more.

Roadway Surface Conditions

The majority of the accidents occurred on dry roads, including fatal and injury accidents (see TABLE 3-11). Combining similar "bad" road conditions, ice, snow, frost, and slush accounts for 16.3 percent of all reported property damage accidents and 10.2 percent of all fatal and injury accidents. Over 80 percent of all fatal and injury accidents occurred on dry roads.

Contributing Circumstances (Vision Obscurement and Other)

Contributing circumstances at the accident level involve two categories: vision obscurement and other. The reporting officer may include one, two, or no contributing circumstances for each category. Vision obscurement refers to conditions such as: fog or smoke, blowing soil, dirt or sand, rain, snow, sleet or hail, windshield or window obscured, glare from sun or lights, trees or other vegetation, snowbank, etc. Vision obscurement as a contributing circumstance was indicated in 20.6 percent of all accidents with two separate vision obscurements being reported in less than two percent of all accidents. Rain, snow, sleet or hail was the most frequently reported vision obscurement and was indicated as a problem in 5.2 percent of all accidents.

Contributing Circumstances - Other - was reported in 30.8 percent of all accidents with two Contributing Circumstances-Other being reported in 2.6 percent of all accidents. These contributing circumstances include wind conditions, slippery surface, road shoulder conditions, objects or animals in the road, phantom vehicle, pedestrians, bicyclists, road construction conditions, rough roads, and faulty or missing traffic control devices. The most common condition reported was slippery surface, and it was reported as a factor in 14.9 percent of all accidents.

TABLE 3-8
REPORTED TRAFFIC ACCIDENTS
SOUTH DAKOTA COUNTIES
1987

County	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd	Fatalities	Injuries
AURORA	64	0	19	45	0	28
BEADLE	409	2	140	267	3	212
BENNETT	34	0	12	22	0	26
BON HOMME	98	1	34	63	1	50
BROOKINGS	437	2	112	323	2	152
BROWN	773	4	261	508	5	365
BRULE	105	0	24	81	0	34
BUFFALO	7	0	3	4	0	4
BUTTE	138	2	44	92	3	76
CAMPBELL	32	0	9	23	0	10
CHARLES MIX	109	2	32	75	2	52
CLARK	57	1	13	43	1	23
CLAY	167	1	62	104	1	83
CODINGTON	391	3	131	257	3	191
CORSON	61	0	27	34	0	33
CUSTER	190	0	60	130	0	80
DAVISON	484	0	156	328	0	240
DAY	123	1	28	94	1	36
DEUEL	75	0	16	59	0	18
DEWEY	25	2	9	14	4	29
DOUGLAS	26	0	8	18	0	11
EDMUNDS	88	1	22	65	1	30
FALL RIVER	115	5	31	79	7	56
FAULK	47	1	13	33	1	20
GRANT	90	0	25	65	0	39
GREGORY	75	0	24	51	0	40
HAAKON	49	1	13	35	1	19
HAMLIN	86	2	16	68	2	26
HAND	78	0	21	57	0	24
HANSON	67	0	18	49	0	37
HARDING	44	1	6	37	1	16
HUGHES	359	4	89	266	4	133
HUTCHINSON	99	3	28	68	3	43
HYDE	42	2	3	37	2	5
JACKSON	85	2	24	59	2	33
JERAULD	40	1	5	34	1	7
JONES	65	0	18	47	0	29
KINGSBURY	98	1	24	73	1	31
LAKE	154	0	42	112	0	61
LAWRENCE	451	4	135	312	5	199
LINCOLN	333	6	117	210	8	201
LYMAN	104	3	25	76	4	54
MC COOK	104	0	21	83	0	29
MC PHERSON	23	1	6	16	1	9

TABLE 3-8 (continued)

County	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd	Fatalities	Injuries
MARSHALL	58	0	16	42	0	24
MEADE	283	0	101	182	0	152
MELLETTE	18	0	10	8	0	13
MINER	75	0	16	59	0	26
MINNEHAHA	2,663	5	882	1,776	5	1,272
MOODY	130	2	44	84	5	64
PENNINGTON	2,034	17	775	1,242	23	1,152
PERKINS	50	1	20	29	1	27
POTTER	49	2	11	36	3	19
ROBERTS	79	1	25	53	1	47
SANBORN	50	1	17	32	1	22
SHANNON	57	8	21	28	10	47
SPINK	147	0	32	115	0	46
STANLEY	51	2	21	28	3	36
SULLY	34	0	4	30	0	6
TODD	33	3	9	21	3	18
TRIPP	140	2	44	94	3	66
TURNER	93	0	30	63	0	41
UNION	168	2	66	100	3	110
WALWORTH	69	0	16	53	0	24
YANKTON	298	1	86	211	1	114
ZIEBACH	3	1	1	1	2	1
Total:	13,083	107	4,173	8,803	134	6,221

Source: Department of Transportation: Accident Records

TABLE 3-9
COUNTIES HAVING MORE THAN TWO PERCENT OF THE
RURAL FATAL & INJURY ACCIDENTS
1987

County	Rural Fatal & Injury Accidents	Percent of All Rural Fatal & Injury Accidents
BEADLE	50	2.6
BROOKINGS	49	2.6
BROWN	76	4.0
CUSTER	50	2.6
LAWRENCE	101	5.3
LINCOLN	89	4.7
MEADE	75	3.9
MINNEHAHA	143	7.5
PENNINGTON	240	12.6
UNION	55	2.9
YANKTON	39	2.0
Total	967	50.8

Source: Department of Transportation: Accident Records

FIGURE 3–5 RURAL F&I ACC/VMTs

SELECTED COUNTIES

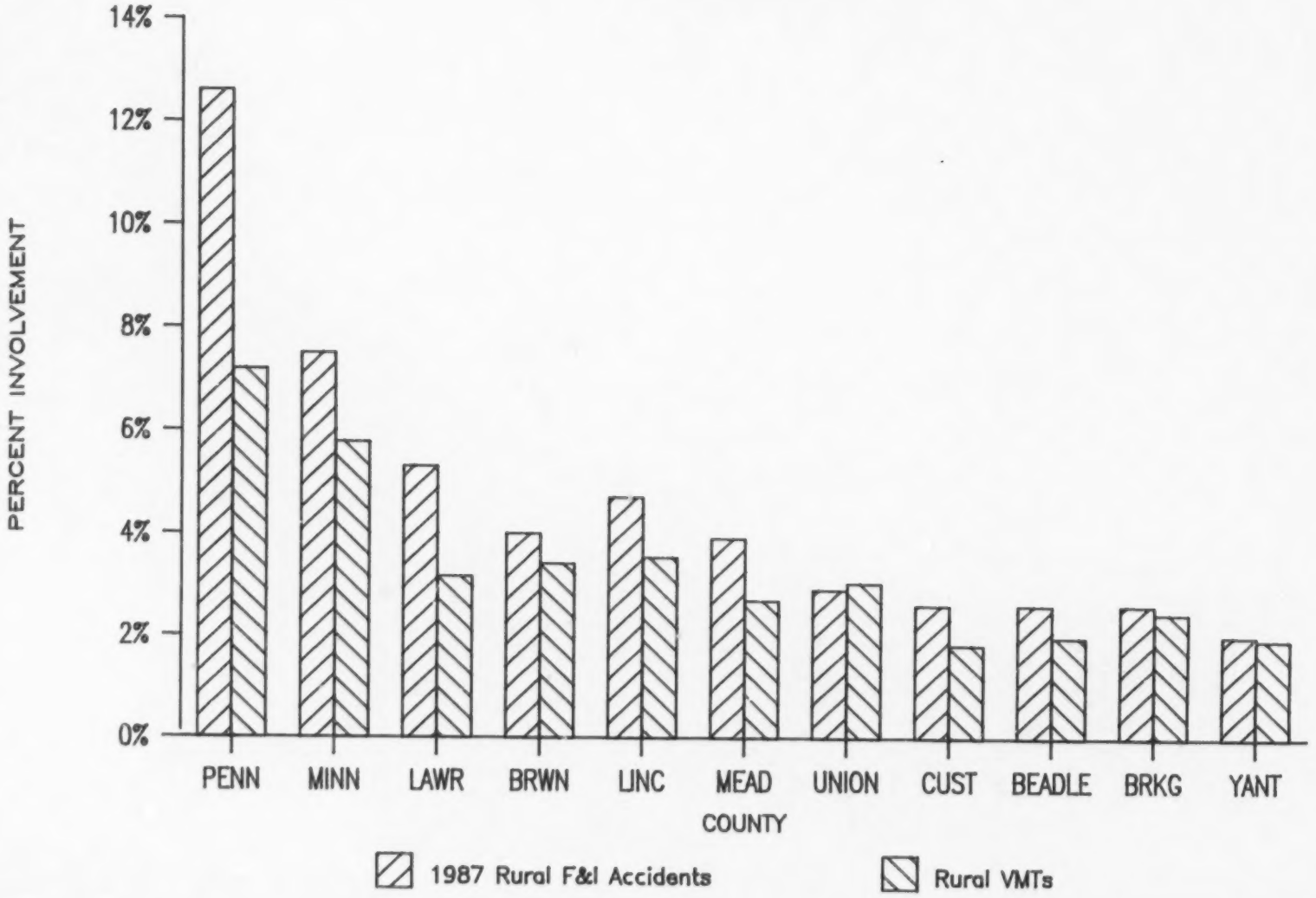


TABLE 3-10
TRAFFIC ACCIDENTS SOUTH DAKOTA CITIES
POPULATION 2500 AND OVER
1987

City	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
Aberdeen	522	1	183	338	1	243
Belle Fourche	56	0	9	47	0	19
Box Elder	40	0	15	25	0	16
Brandon City	22	0	5	17	0	6
Brookings	218	1	58	159	1	73
Canton	38	0	16	22	0	26
Hot Springs	48	1	11	36	1	14
Huron	256	1	89	166	1	126
Lead	40	0	11	29	0	16
Madison	62	0	17	45	0	22
Milbank	37	0	11	26	0	21
Mitchell	383	0	126	257	0	187
Mobridge	23	0	5	18	0	5
Pierre	285	0	70	215	0	107
Rapid City	1,370	5	526	839	8	770
Redfield	33	0	6	27	0	8
Sioux Falls	2,159	3	737	1,419	3	1,050
Sisseton	13	0	3	10	0	5
Spearfish	65	0	14	51	0	22
Sturgis	78	0	26	52	0	36
Vermillion	92	0	31	61	0	34
Watertown	273	1	105	167	1	150
Winner	85	1	19	65	1	22
Yankton	172	0	46	126	0	60

Source: Department of Transportation: Accident Records

TABLE 3-11
ROADWAY SURFACE CONDITIONS
1987

	Total Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
Dry	9,874	75.5	97	90.7	3,333	79.9	6,444	73.2
Wet	1,229	9.4	2	1.9	385	9.2	842	9.6
Ice	1,162	8.9	5	4.7	275	6.6	882	10.0
Frost	73	0.6	0	0.0	22	0.5	51	0.6
Slush	144	1.1	0	0.0	30	0.7	114	1.3
Snow	490	3.7	1	0.9	102	2.4	387	4.4
Mud	16	0.1	0	0.0	5	0.1	11	0.1
Other	45	0.3	1	0.9	8	0.2	36	0.4
Unknown	50	0.4	1	0.9	13	0.3	36	0.4
Total:	13,083	100	107	100	4,173	100	8,803	100

Source: Department of Transportation: Accident Records

Accidents by Time of Day, Month, and Day of Week

The late afternoon, 3:00-6:00 p.m., was the peak three-hour period for accidents to occur. Twenty-three percent of property damage only and injury accidents occurred during this time period. The one-hour period, 3:00-4:00 p.m., had the most fatal accidents (11), and the most fatalities (16) (see TABLE 3-12).

The summer months had the most fatal and injury accidents during 1987, while the winter months had more PDO accidents. Thirty-four percent of the fatal accidents and 32 percent of the injury accidents occurred in June, July, and August. There is more vacation and other recreational travel during these months. Twenty-two percent of the PDO accidents occurred in November and December. The road conditions in the winter months contribute to the increase in PDO accidents (see TABLE 3-13).

Friday and Saturday account for 33.5 percent of the injury accidents, while Saturday and Sunday account for 35.5 percent of the fatal accidents (see TABLE 3-14).

FIGURES 3-6 through 3-8 illustrate the trends of time of day, month, and day of week.

TABLE 3-12
ACCIDENTS BY TIME OF DAY
1987

Time	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
Midnight	317	3	112	202	3	165
1:00 AM	316	1	111	204	1	152
2:00 AM	296	6	121	169	6	193
3:00 AM	180	3	76	101	4	109
4:00 AM	114	4	38	72	6	65
5:00 AM	198	4	43	151	5	51
6:00 AM	270	1	57	212	2	77
7:00 AM	520	5	152	363	9	215
8:00 AM	546	4	168	374	4	268
9:00 AM	463	5	154	304	5	222
10:00 AM	506	2	138	366	2	206
11:00 AM	584	2	201	381	2	307
12:00 PM	690	2	245	443	2	350
1:00 PM	676	6	217	453	7	333
2:00 PM	733	2	251	480	2	368
3:00 PM	992	11	339	642	16	509
4:00 PM	988	5	357	626	5	535
5:00 PM	1,013	7	305	701	11	453
6:00 PM	755	7	248	500	8	371
7:00 PM	674	7	195	472	7	308
8:00 PM	591	5	165	421	5	243
9:00 PM	618	6	168	444	8	248
10:00 PM	508	3	135	370	6	213
11:00 PM	423	5	140	278	7	213
Unknown	112	1	37	74	1	47
	13,083	107	4,173	8,803	134	6,221

Source: Department of Transportation: Accident Records

TABLE 3-13
ACCIDENTS BY MONTH
1987

Month	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
JANUARY	923	9	253	661	11	367
FEBRUARY	872	6	255	611	10	362
MARCH	946	5	280	661	7	409
APRIL	826	4	316	506	4	468
MAY	960	5	337	618	6	514
JUNE	1,117	11	425	681	13	639
JULY	1,193	13	447	733	18	685
AUGUST	1,222	12	464	746	15	683
SEPTEMBER	1,165	15	384	766	16	575
OCTOBER	1,205	13	348	844	13	519
NOVEMBER	1,288	7	313	968	11	478
DECEMBER	1,366	7	351	1,008	10	522
Total	13,083	107	4,173	8,803	134	6,221

Source: Department of Transportation: Accident Records

TABLE 3-14
ACCIDENTS BY DAY OF WEEK
1987

Day	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
SUNDAY	1,662	19	552	1,091	29	886
MONDAY	1,654	7	498	1,149	8	704
TUESDAY	1,764	18	557	1,189	22	793
WEDNESDAY	1,863	14	590	1,259	16	865
THURSDAY	1,806	12	578	1,216	14	825
FRIDAY	2,194	18	690	1,486	20	1,062
SATURDAY	2,140	19	708	1,413	25	1,086
Total	13,083	107	4,173	8,803	134	6,221

Source: Department of Transportation: Accident Records

FIGURE 3–6 ACCIDENTS BY TIME OF DAY

1987

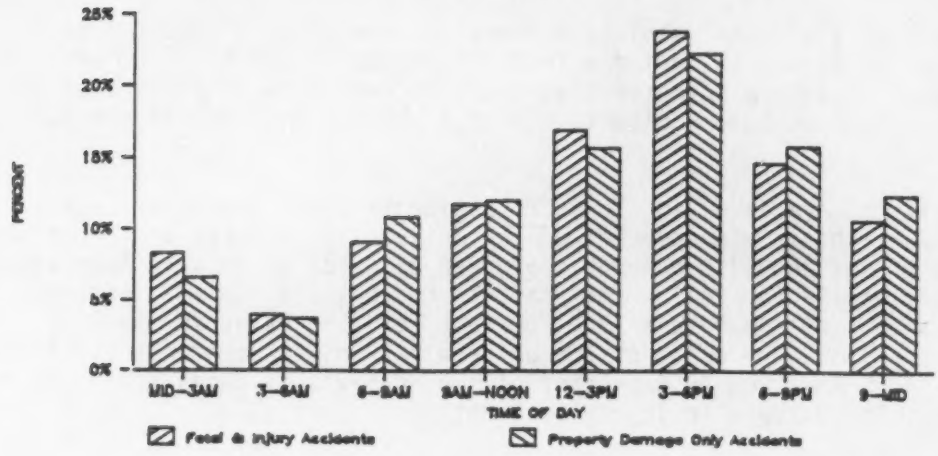


FIGURE 3–7 ACCIDENTS BY MONTH

1987

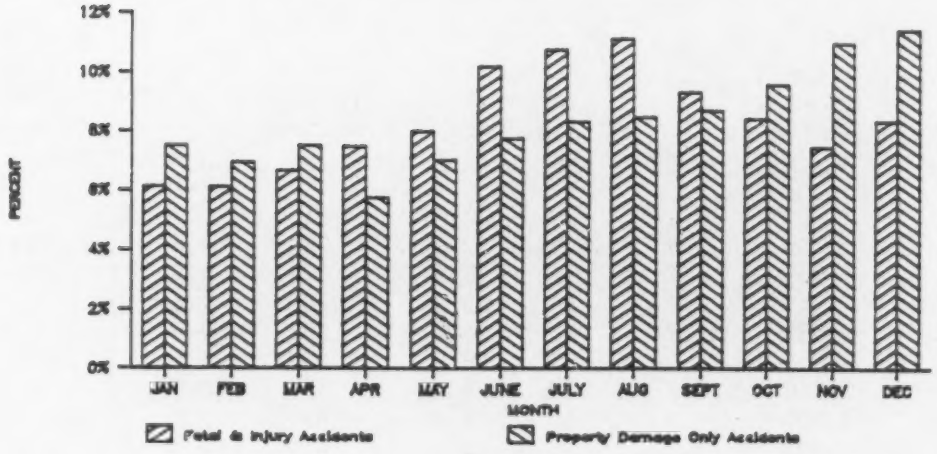
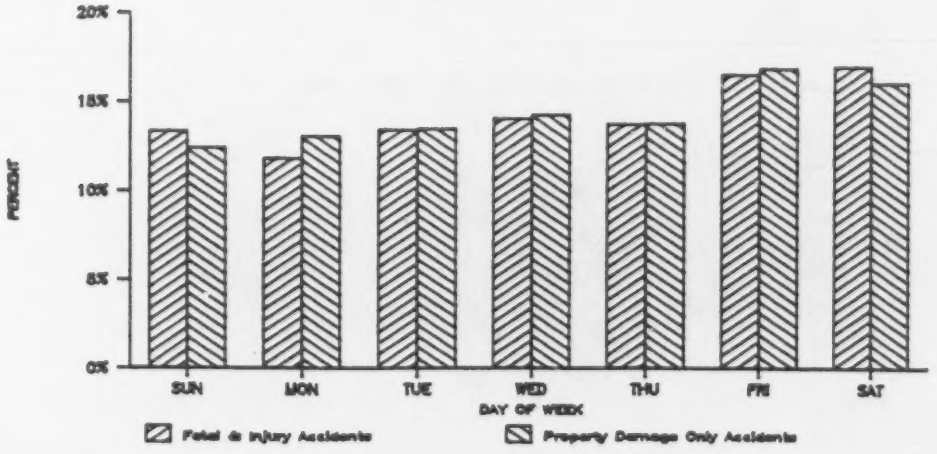


FIGURE 3–8 ACCIDENTS BY DAY OF WEEK

1987



Drivers

There were 20,131 motor vehicle drivers in the 13,083 reported motor vehicle accidents, including 152 drivers in fatal accidents and 6,592 drivers in injury accidents. Seventy-nine drivers were killed, which is 59 percent of all persons killed in motor vehicle accidents and 62.2 percent or 3,871 of the 6,221 injured were drivers.

Young drivers are involved in more accidents than any other age group (see TABLE 3-15). Thirty-nine percent of the drivers in reported accidents are under 25 years of age and 62.2 percent are under 35. Age of drivers involved in fatal and injury accidents follow the pattern of drivers in all accidents. Those drivers under 25 represent 33.6 percent of the drivers involved in fatal accidents and 39.4 percent of the drivers in injury accidents. Drivers under the age of 35 make up 56.6 percent of the drivers in fatal accidents and 63.6 percent of the drivers in injury accidents.

TABLE 3-15
AGE OF DRIVERS IN ACCIDENTS
1987

Age	Drivers In All Accidents No.	%	Drivers In Fatal Accidents No.	%	Drivers In Injury Accidents No.	%	Drivers In PDO Accidents No.	%
6-13	25	0.1	0	0.0	10	0.2	15	0.1
14-15	700	3.5	3	2.0	238	3.6	459	3.4
16-18	2,963	14.7	9	5.9	1,029	15.6	1,925	14.4
19-20	1,545	7.7	14	9.2	480	7.3	1,051	7.9
21-24	2,589	12.9	25	16.4	837	12.7	1,727	12.9
25-34	4,693	23.3	35	23.0	1,597	24.2	3,061	22.9
35-44	2,748	13.7	20	13.2	890	13.5	1,838	13.7
45-54	1,554	7.7	10	6.6	495	7.5	1,049	7.8
55-64	1,453	7.2	18	11.8	427	6.5	1,008	7.5
65-Over	1,733	8.6	18	11.8	570	8.6	1,145	8.6
Unknown	128	0.6	0	0.0	19	0.3	109	0.8
Total	20,131	100	152	100	6,592	100	13,387	100

Source: Department of Transportation: Accident Records

Drinking drivers are of major concern because of the number of alcohol-involved serious accidents. TABLE 3-16 provides information on the age of drinking drivers in motor vehicle accidents. There were a reported 1,448 drinking drivers in all accidents which is about 7.2 percent of all drivers in accidents. Fifty-two or 34.2 percent of drivers in fatal accidents had been drinking while 11.3 percent of the drivers involved in injury accidents had been drinking. Young drivers are predominantly the drinking drivers in accidents. Those drivers under 25 years of age accounted for nearly one-half of the drinking drivers in all categories of accidents; while those under 35 years of age accounted for over three-fourths of the drinking drivers in fatal accidents and over 79.3 percent of the drinking drivers in all accidents.

TABLE 3-16
AGE OF DRINKING DRIVERS IN ACCIDENTS
1987

Age	Drivers In All Accidents No.	%	Drivers In Fatal Accidents No.	%	Drivers In Injury Accidents No.	%	Drivers In PDO Accidents No.	%
6-13	2	0.1	0	0.0	1	0.1	1	0.2
14-15	16	1.1	0	0.0	9	1.2	7	1.1
16-18	209	14.4	5	9.6	108	14.5	96	14.7
19-20	175	12.1	7	13.5	80	10.8	88	13.5
21-24	317	21.9	12	23.1	156	21.0	149	22.9
25-34	429	29.6	17	32.7	230	30.9	182	27.9
35-44	166	11.5	5	9.6	92	12.4	69	10.6
45-54	60	4.1	2	3.8	35	4.7	23	3.5
55-64	45	3.1	3	5.8	18	2.4	24	3.7
65-Over	21	1.5	1	1.9	11	1.5	9	1.4
Unknown	8	0.6	0	0.0	4	0.5	4	0.6
Total	1,448	100	52	100	744	100	652	100

Source: Department of Transportation: Accident Records

TABLE 3-17 compares age of drivers in fatal and injury accidents, drinking drivers in fatal and injury accidents, and speeding drivers in fatal and injury accidents with licensed drivers by age. Again the young driver is over-represented as those drivers in fatal and injury accidents, drinking drivers in fatal and injury accidents, and speeding drivers in fatal and injury accidents. Nineteen percent of the licensed drivers in South Dakota were under 25, but 47.5 percent of the drinking drivers in fatal and injury accidents and 58 percent of the speeding drivers in fatal and injury accidents were under 25 years of age. Nearly eighty percent of the drinking drivers and speeding drivers in fatal and injury accidents were under 35 years of age while drivers under 35 years of age constitute 42 percent of all licensed drivers (also see FIGURES 3-9 and 3-10).

TABLE 3-17
LICENSED DRIVERS AND FATAL AND INJURY ACCIDENT-INVOLVED DRIVERS BY AGE
1987

Age	Licensed Drivers %	Drivers In Fatal & Injury Accidents No.	%	Drinking Drivers In Fatal & Injury Accidents No.	%	Speeding Drivers In Fatal & Injury Accidents No	%
0-13	0.0	10	0.1	1	0.1	5	0.5
14-15	1.5	241	3.6	9	1.1	67	6.7
16-17	3.7	711	10.5	52	6.5	152	15.2
18	2.0	327	4.8	61	7.7	70	7.0
19	1.9	278	4.1	44	5.5	64	6.4
20	1.9	216	3.2	43	5.4	59	5.9
21-24	8.3	862	12.8	168	21.1	161	16.1
25-34	22.7	1,632	24.2	247	31.0	226	22.7
35-44	17.5	910	13.5	97	12.2	101	10.1
45-54	11.8	505	7.5	37	4.6	35	3.5
55-64	12.0	445	6.6	21	2.6	26	2.6
65-Over	16.6	588	8.7	12	1.5	31	3.1
Unknown		19	0.3	4	0.5	0	0.0
TOTAL	100	6,744	100	796	100	997	100

Sources: Department of Transportation: Accident Records
Department of Commerce & Regulation: Driver License Issuance

FIGURE 3–9 DRIVERS BY AGE GROUP 1987

FATAL & INJURY ACCIDENT–INVOLVED DRIVERS

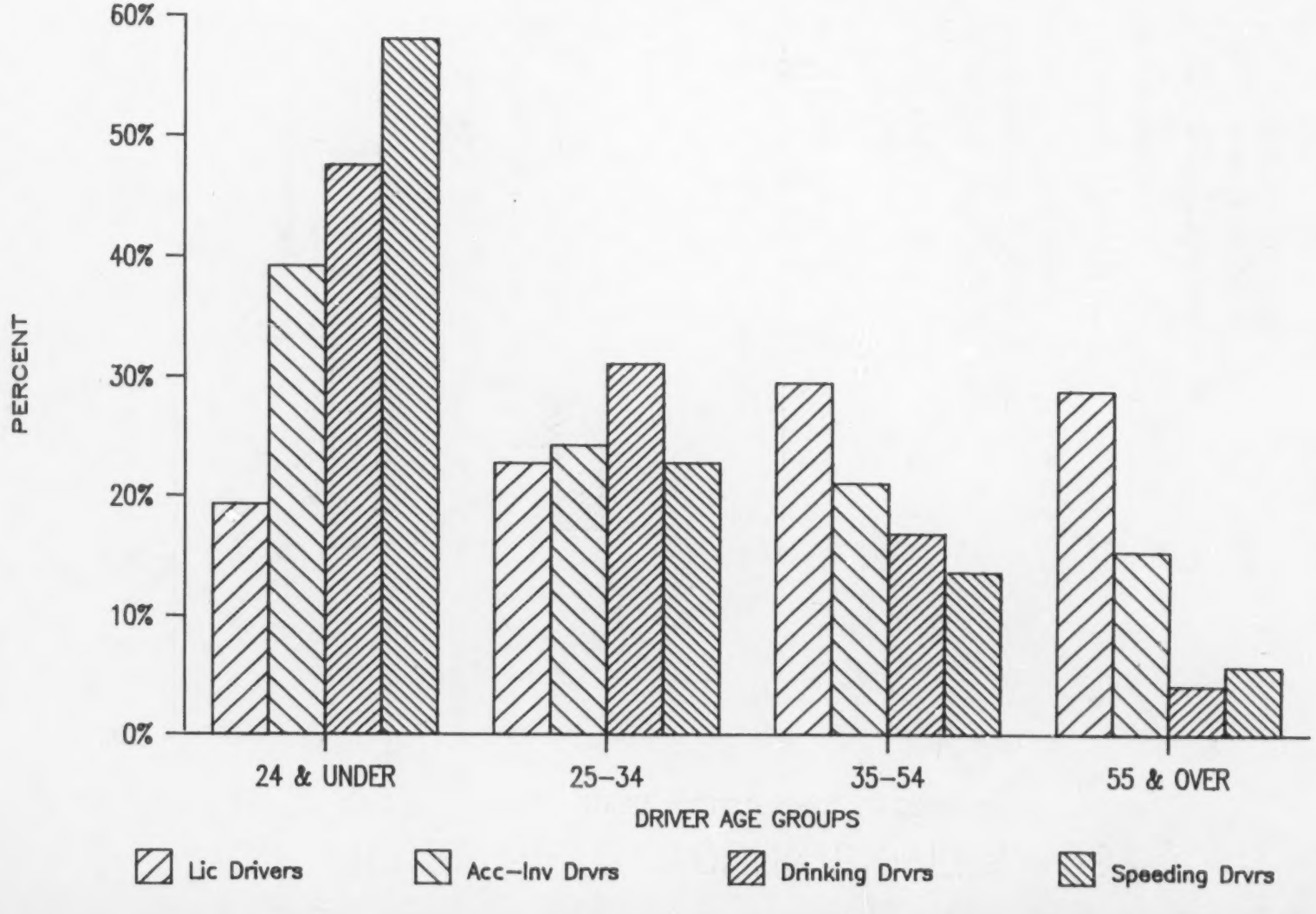
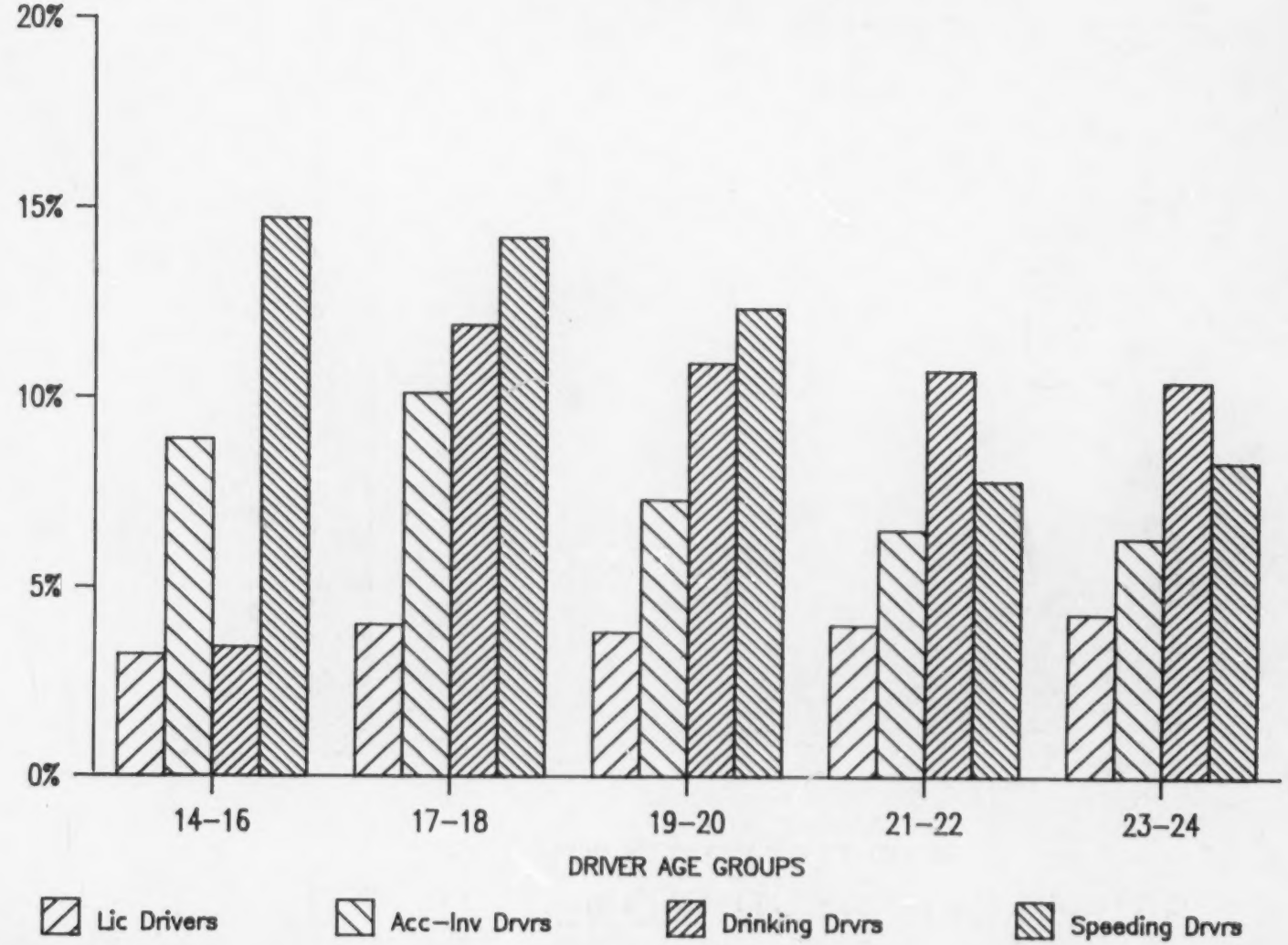


FIGURE 3–10 YOUNG DRIVERS 1987

FATAL & INJURY ACCIDENT–INVOLVED DRIVERS



Driver actions are reported to indicate possible factors that may have contributed to the accidents. These factors are referred to as driver contributing circumstances. Drinking was the leading driver contributing circumstance in fatal accidents during 1987. It was indicated that the drinking of 52 or 34.2 percent of the drivers in fatal accidents contributed to the accident. Exceeding the speed limit and driving on the wrong side of the road were the other leading driver contributing circumstance in fatal accidents. Failing to yield to another vehicle was the leading contributing circumstance in injury accidents. Drinking and exceeding a safe speed but not the legal limit were other leading driver contributing circumstances in injury accidents (see TABLE 3-18).

TABLE 3-18
MOTOR VEHICLE DRIVER CONTRIBUTING CIRCUMSTANCES
1987

	Total Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
No Contributing Circumstances	10,209	50.7	48	31.6	3,043	46.2	7,118	53.2
Drinking	1,448	7.2	52	34.2	744	11.3	652	4.9
Exceeded Speed Limit	961	4.8	32	21.1	456	6.9	473	3.5
Wrong Side of Road	411	2.0	14	9.2	206	3.1	191	1.4
Exceeded Safe Speed But Not Limit	1,468	7.3	8	5.3	501	7.6	959	7.2
Failed to Yield to Vehicle	2,847	14.1	13	8.6	973	14.8	1,861	13.9
Failed to Stop for Stop Sign Flashing Red	359	1.8	3	2.0	158	2.4	198	1.5
Fell Asleep	307	1.5	8	5.3	168	2.5	131	1.0
Improper Passing	247	1.2	5	3.3	66	1.0	176	1.3
Distracted by Object/ Person in Car	477	2.4	3	2.0	190	2.9	284	2.1
Improper Turn	543	2.7	2	1.3	177	2.7	364	2.7
Following Too Closely	933	4.6	2	1.3	386	5.9	545	4.1
Improper Backing	320	1.6	0	0.0	28	0.4	292	2.2
Other*	2,048	10.2	15	9.9	727	11.0	1,306	9.8
Unknown	556	2.8	18	11.8	155	2.4	383	2.9
Total Drivers	20,131		152		6,592		13,387	

Note: The investigating officer may assign from zero to three contributing circumstances to each driver; therefore, the number of drivers in motor vehicle accidents does not equal the number of contributing circumstances. The number of drivers having drinking as a contributing circumstance is equal to the number of reported drinking drivers in accidents.

*Other includes driving under posted minimum, failed to yield to pedestrian, disregarded stop and go signal, disregarded other traffic control devices, improper signal or failure to signal, turning from wrong lane, improper lane change, improper start from parked position, improper parking, failure to comply with license restrictions, drugs, illness, physical impairment, and illegally in roadway.

Source: Department of Transportation: Accident Records

Motorcycles

Motorcycle accidents constitute 3 percent of all accidents, 12.1 percent of all fatal accidents, and 8.3 percent of all injury accidents. There were 14 people killed and 417 injured on motorcycles in the 399 reported motorcycle accidents during 1987. The number of motorcycle accidents have shown a decline in the last few years, while the number of licensed motorcyclists have stabilized at approximately 45,000 (see TABLE 2-8). The young motorcycle driver is over-represented in accidents when compared to their portion of licensed motorcycle operators. Twenty-five percent of all accident-involved riders are less than 20 years of age and nearly 70 percent are under 30 (see TABLE 3-19 and FIGURE 3-11).

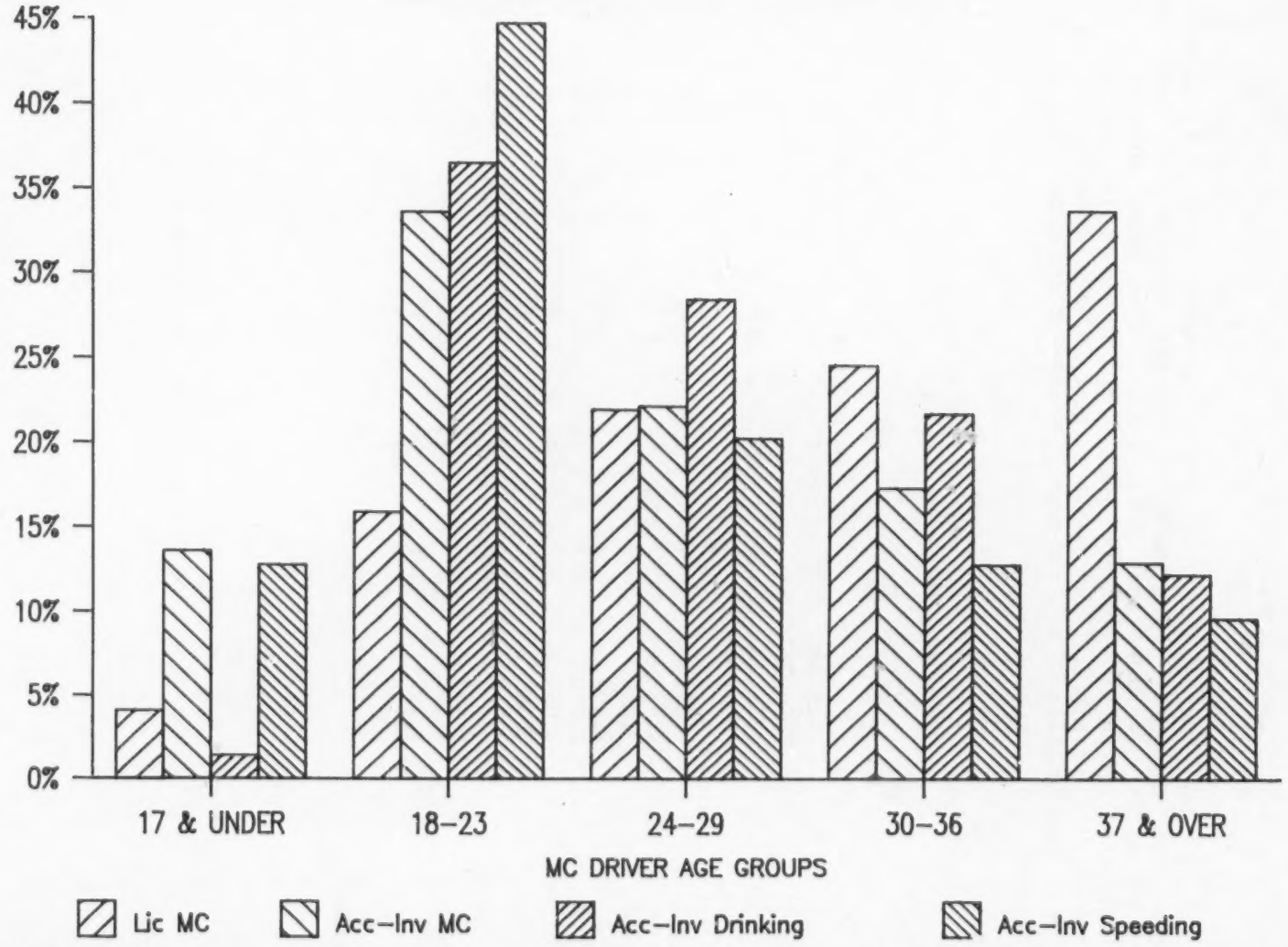
TABLE 3-19
MOTORCYCLISTS BY AGE GROUP
1987

Age Group	Licensed Motorcyclists No.	%	Motorcycle Drivers In Accidents No.	%	Drinking Motorcycle Drivers In Accidents No.	%	Speeding Motorcycle Drivers In Accidents No.	%
0-13	0	0.0	1	0.2	0	0.0	0	0.0
14-15	427	0.9	15	3.6	0	0.0	2	2.1
16-17	1,424	3.2	40	9.7	1	1.4	10	10.6
18-19	2,028	4.5	48	11.7	8	10.8	16	17.0
20-21	2,355	5.2	45	10.9	7	9.5	12	12.8
22-23	2,752	6.1	45	10.9	12	16.2	14	14.9
24-25	3,067	6.8	41	10.0	11	14.9	8	8.5
26-27	3,506	7.8	27	6.6	6	8.1	6	6.4
28-29	3,252	7.2	23	5.6	4	5.4	5	5.3
30-31	3,532	7.9	26	6.3	7	9.5	4	4.3
32-36	7,503	16.7	45	10.9	9	12.2	8	8.5
37-41	5,229	11.6	27	6.6	6	8.1	7	7.4
42-51	5,318	11.8	17	4.1	3	4.1	1	1.1
52-Over	4,563	10.1	9	2.2	0	0.0	1	1.1
Unknown		0.0	2	0.5	0	0.0	0	0.0
Total	44,956	100	411	100	74	100	94	100

Sources: Department of Commerce & Regulation: Driver License Issuance
Department of Transportation: Accidents Records

FIGURE 3–11 MOTORCYCLISTS 1987

ACCIDENT–INVOLVED MOTORCYCLE & MOPED DRIVERS



Helmets were used by 108 or 28.1 percent of the motorcycle drivers in accidents while 277 or 71.9 percent did not wear a helmet (see TABLE 3-20). Twelve motorcycle drivers, one motorcycle passenger, and one moped driver were killed during 1987; only two were wearing helmets.

TABLE 3-20
HELMET USE BY MOTORCYCLE DRIVERS IN ACCIDENTS
1987

Age	Helmet Used		Helmet Not Used	
	No.	%	No.	%
6-13	0	0.0	1	100.0
14-15	12	85.7	2	14.3
16-17	23	60.5	15	39.5
18-20	19	28.8	47	71.2
21-24	21	25.6	61	74.4
25-34	13	10.4	112	89.6
35-44	13	30.2	30	69.8
45-Over	7	43.8	9	56.3
Unknown	0	0.0	0	0.0
Total	108	28.1	277	71.9

Note: Percentages are row percents.

Source: Department of Transportation: Accident Records

Pedestrians

A 26-year record low of seven pedestrian deaths and 126 injuries in motor vehicle accidents occurred during 1987 (see TABLE 3-21). The youngest pedestrian killed was 17 years old while the oldest was over 97. Of the injured pedestrians, 43 percent were under 14 years of age and 56.3 percent were under 20 years of age. Ninety-three percent of the pedestrian injuries happened in urban areas (see TABLE 3-23).

Since 1970 there has been an average of 18 pedestrians killed in accidents each year (see TABLE 2-9). Illegally in roadway, failure to yield to vehicle, and drinking were the three most common contributing circumstances in pedestrian fatalities. There were no contributing circumstances in 70 or 56 percent of the pedestrian injuries. Officers reported that six of the seven pedestrians killed had been drinking alcohol (see TABLE 3-22). The average BAC of those pedestrians who had been drinking was 0.11 percent with BACs ranging from 0.01 percent to 0.21 percent.

TABLE 3-21
AGE OF PEDESTRIANS IN TRAFFIC ACCIDENTS
1987

	Fatalities		Injuries	
	No.	%	No.	%
0-5	0	0.0	21	16.7
6-13	0	0.0	33	26.2
14-19	1	14.3	17	13.5
20-24	2	28.6	6	4.8
25-34	1	14.3	9	7.1
35-44	0	0.0	8	6.3
45-54	0	0.0	9	7.1
55-64	0	0.0	8	6.3
65-Over	3	42.9	14	11.1
Unknown	0	0.0	1	0.8
Total	7	100	126	100

Source: Department of Transportation: Accident Records

TABLE 3-22
ALCOHOL INVOLVEMENT BY PEDESTRIANS
1987

Alcohol Involvement	Fatalities No.	Fatalities %	Injuries No.	Injuries %
Alcohol or Drugs	6	85.7	12	9.5
No Alcohol	0	0.0	110	87.3
Unknown	1	14.3	4	3.2
Total	7	100	126	100

Source: Department of Transportation: Accident Records

TABLE 3-23
RURAL vs. URBAN PEDESTRIAN ACCIDENTS
1987

	Fatalities	Injuries
Rural	5	9
Urban	2	117
Total	7	126

Source: Department of Transportation: Accident Records

Bicycles

There was one bicycle driver killed and 154 injured in reported motor vehicle accidents during 1987 (see TABLE 3-24). There were three bicycle passengers injured during 1987. The leading factor in bicycle involved crashes was the bicycle driver failing to yield to a motor vehicle. Other bicyclist contributing circumstances were improper turning, being on the wrong side of the road, illegally in the roadway, and failing to stop for stop sign or flashing red light. Fifty-four of the bicycle drivers in accidents had no contributing circumstances. Bicycle injuries, which include three passengers, in 1987, increased 43 percent over the prior three-year average. The increase occurred in age group 6-13. The yearly, 1970-1987, trend of bicycle fatalities and injuries is provided in TABLE 2-10.

TABLE 3-24
AGE OF BICYCLE DRIVERS IN TRAFFIC ACCIDENTS
1987

	Fatalities Number	Injuries Number	%
0-5	0	9	5.8
6-13	1	84	54.5
14-19	0	26	16.9
20-24	0	13	8.4
25-34	0	10	6.5
35-44	0	8	5.2
45-54	0	2	1.3
55-64	0	0	0.0
65-Over	0	2	1.3
Unknown	0	0	0.0
Total	1	154	100

Source: Department of Transportation: Accident Records

IV. GLOSSARY OF TERMS

Reportable Traffic Accident: motor vehicle traffic accident which involves death, injury or property damage to an apparent extent of five hundred dollars or more to any one person's property or accumulated property damage of one thousand dollars per accident.

Fatal Accident: motor vehicle traffic accident in which at least one person dies as the result of the accident and dies within 30 days of the date of the accident.

Injury Accident: motor vehicle accident in which at least one person was injured and no one was killed.

Property Damage Only (PDO) Accident: motor vehicle accident in which no one was killed or injured but there was property damage to an apparent extent of five hundred dollars or more to any one person's property or accumulated property damage of one thousand dollars per accident.

Fatality Rate: number of traffic fatalities per 100 million vehicle miles traveled.

Alcohol Involved Accident (1983-1987): at least one driver, pedestrian, or bicycle driver had been drinking in the opinion of the investigating officer.

Economic Loss: the calculable costs of motor vehicle accidents are wage loss, medical expense, insurance administration cost, and property damage. (Source: Estimating the Costs of Accidents 1986, National Safety Council)

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